

Sequence Listing

<110> Baker, Kevin P.
Botstein, David
Desnoyers, Luc
Eaton, Dan L.
Ferrara, Napoleone
Fong, Sherman
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Goddard, Audrey
Godowski, Paul J.
Grimaldi, Christopher J.
Gurney, Austin L.
Hillan, Kenneth J.
Pan, James
Paoni, Nicholas F.
Roy, Margaret Ann
Smith, Victoria
Stewart, Timothy A.
Tumas, Daniel
Watanabe, Colin K.
Williams, P. Mickey
Wood, William I.

<120> Secreted and Transmembrane Polypeptides and Nucleic
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| Gender | 0.5 | 0.5 | 0 | 1 |
| Marital status | 0.5 | 0.5 | 0 | 1 |
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| Income | 1.5 | 0.5 | 1 | 2 |
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| World health | 0.5 | 0.5 | 0 | 1 |
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| Pro Phe Val Leu Ile | Ala Thr Gly Thr Val | Ile Ile Leu Leu Gly | |
| | 65 | 70 | 75 |
| Thr Phe Gly Cys Phe | Ala Thr Cys Arg Ala | Ser Ala Trp Met Leu | |
| | 80 | 85 | 90 |
| Lys Leu Tyr Ala Met | Phe Leu Thr Leu Val | Phe Leu Val Glu Leu | |
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| Phe | Gly | Leu | Val | Gln | Ser | Lys | Leu | Phe | Pro | Phe | Tyr | Phe | His | Ile | 50 | 55 | 60 |
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| His | Ala | Trp | Ala | Gln | Leu | Thr | Phe | Trp | Glu | Ala | Ser | Gln | Leu | Tyr | 80 | 85 | 90 |
| Leu | Leu | Phe | Leu | Ser | Leu | Thr | Leu | Ala | Thr | Val | Asn | Ala | Arg | Trp | 95 | 100 | 105 |
| Leu | Glu | Pro | Arg | Thr | Thr | Ala | Ala | Met | Trp | Ala | Leu | Gln | Thr | Val | 110 | 115 | 120 |
| Glu | Lys | Glu | Arg | Gly | Leu | Gly | Gly | Glu | Val | Pro | Gly | Ser | His | Gln | 125 | 130 | 135 |
| Gly | Pro | Asp | Pro | Tyr | Arg | Gln | Leu | Arg | Glu | Lys | Asp | Pro | Lys | Tyr | 140 | 145 | 150 |
| Ser | Ala | Leu | Arg | Gln | Asn | Phe | Phe | Arg | Tyr | His | Gly | Leu | Ser | Ser | 155 | 160 | 165 |
| Leu | Cys | Asn | Leu | Gly | Cys | Val | Leu | Ser | Asn | Gly | Leu | Cys | Leu | Ala | 170 | 175 | 180 |
| Gly | Leu | Ala | Leu | Glu | Ile | Arg | Ser | Leu | | | | | | | 185 | | |

<210> 9
 <211> 1508
 <212> DNA
 <213> Homo sapiens

<400> 9
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 agggggaaaa atgctctttt ggggtgctagg cctcctaata ctctgtgggt 150
 ttctgtggac tcgtaaagga aaactaaaga ttgaagacat cactgataag 200
 tacattttta tcaactggatg tgactcgggc tttggaaact tggcagccag 250
 aacttttgat aaaaagggat ttcattgtaat cgctgcctgt ctgactgaat 300
 caggatcaac agcttttaaag gcagaaacct cagagagact tcgtactgtg 350
 cttctggatg tgaccgaccc agagaatgtc aagaggactg cccagtgggt 400

gaagaaccaa gttggggaga aagggtctctg ggggtctgatc aataatgctg 450
 gtgttccccg cgtgctggct cccactgact ggctgacact agaggactac 500
 agagaaccta ttgaagtga cctgttttga ctcacagtg tgacactaaa 550
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 gtgttgaggg tcgccttgca atcggttgag ggggtatac tccatccaaa 650
 tatgcagtgg aaggtttcaa tgacagctta agacgggaca tgaaagcttt 700
 tgggtgtcac gtctcatgca ttgaaccagg attgttcaaa acaaacttgg 750
 cagatccagt aaaggtaatt gaaaaaaaaac tcgccatttg ggagcagctg 800
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 agacaaactg aaaggcaata aatcctatgt gaacatggac ctctctccgg 900
 tggtagagtg catggaccac gctctaacaa gtctcttccc taagactcat 950
 tatgccgctg gaaaagatgc caaaattttc tggatacctc tgtctcacat 1000
 gccagcagct ttgcaagact ttttattgtt gaaacagaaa gcagagctgg 1050
 ctaatcccaa ggcagtgtga ctcagctaac cacaaatgtc tcctccaggc 1100
 tatgaaattg gccgatttca agaacacatc tccttttcaa cccattcct 1150
 tatctgctcc aacctggact cathtagatc gtgcttattt ggattgcaaa 1200
 agggagtccc accatcgctg gtggtatccc aggggtccctg ctcaagtttt 1250
 ctttgaaaag gagggctgga atggtacatc acataggcaa gtcctgccct 1300
 gtatttaggc tttgcctgct tgggtgtgatg taagggaat tgaaagactt 1350
 gccattcaa aatgatcttt accgtggcct gcccctgct tatggtcccc 1400
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 taaaagataa gtcaacccaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500
 aaaaaaaaa 1508

<210> 10
 <211> 319
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-17
 <223> Signal Peptide

<220>
 <221> misc_feature

<222> 36-47, 108-113, 166-171, 198-203, 207-212
 <223> N-myristoylation Sites.

<220>
 <221> misc feature
 <222> 39-42
 <223> Glycosaminoglycan Attachment Site.

<220>
 <221> TRANSMEM
 <222> 136-152
 <223> Transmembrane Domain

<220>
 <221> misc feature
 <222> 161-163, 187-190 and 253-256
 <223> N-glycosylation Sites.

<400> 10
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 Trp Thr Arg Lys Gly Lys Leu Lys Ile Glu Asp Ile Thr Asp Lys
 20 25 30
 Tyr Ile Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Ala
 35 40 45
 Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
 50 55 60
 Leu Thr Glu Ser Gly Ser Thr Ala Leu Lys Ala Glu Thr Ser Glu
 65 70 75
 Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
 80 85 90
 Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
 95 100 105
 Leu Trp Gly Leu Ile Asn Asn Ala Gly Val Pro Gly Val Leu Ala
 110 115 120
 Pro Thr Asp Trp Leu Thr Leu Glu Asp Tyr Arg Glu Pro Ile Glu
 125 130 135
 Val Asn Leu Phe Gly Leu Ile Ser Val Thr Leu Asn Met Leu Pro
 140 145 150
 Leu Val Lys Lys Ala Gln Gly Arg Val Ile Asn Val Ser Ser Val
 155 160 165
 Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr Thr Pro Ser Lys
 170 175 180
 Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg Asp Met Lys
 185 190 195

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Phe | Gly | Val | His | Val | Ser | Cys | Ile | Glu | Pro | Gly | Leu | Phe | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Asn | Leu | Ala | Asp | Pro | Val | Lys | Val | Ile | Glu | Lys | Lys | Leu | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Trp | Glu | Gln | Leu | Ser | Pro | Asp | Ile | Lys | Gln | Gln | Tyr | Gly | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Tyr | Ile | Glu | Lys | Ser | Leu | Asp | Lys | Leu | Lys | Gly | Asn | Lys | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Val | Asn | Met | Asp | Leu | Ser | Pro | Val | Val | Glu | Cys | Met | Asp | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Leu | Thr | Ser | Leu | Phe | Pro | Lys | Thr | His | Tyr | Ala | Ala | Gly | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Ala | Lys | Ile | Phe | Trp | Ile | Pro | Leu | Ser | His | Met | Pro | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Gln | Asp | Phe | Leu | Leu | Leu | Lys | Gln | Lys | Ala | Glu | Leu | Ala | Asn | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Pro | Lys | Ala | Val | | | | | | | | | | | | |

<210> 11
 <211> 2720
 <212> DNA
 <213> Homo sapiens

<400> 11
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 gcccttggg ccgtcgccac cactgtagtc atgtaccac cgccgccgcc 150
 gccgcctcat cgggacttca tctcggtgac gctgagcttt ggcgagagct 200
 atgacaacag caagagttgg cggcggcgct cgtgctggag gaaatggaag 250
 caactgtcga gattgcagcg gaatatgatt ctcttctcc ttgcctttct 300
 gcttttctgt ggactcctct totacatcaa cttggctgac cattggaaaag 350
 ctctggcttt caggctagag gaagagcaga agatgaggcc agaaattgct 400
 gggttaaaac cagcaaacc acccgtctta ccagctcctc agaaggcgga 450
 caccgaccct gagaacttac ctgagatttc gtcacagaag acacaaagac 500
 acatccagcg gggaccacct cacctgcaga ttagaccccc aagccaagac 550
 ctgaaggatg ggaccaggga ggaggccaca aaaaggcaag aagcccctgt 600
 ggatccccgc ccggaaggag atccgcagag gacagtcac agctggaggg 650

gagcggatgat cgagcctgag cagggcaccg agctcccttc aagaagagca 700
gaagtgccca ccaagcctcc cctgccaccg gccaggacac agggcacacc 750
agtgcacatg aactatcgcc agaagggcgt gattgacgtc ttcttgcacg 800
catggaaagg ataccgcaag tttgcatggg gccatgacga gctgaagcct 850
gtgtccaggt ccttcagtga gtgggtttggc ctcgggtctca cactgatcga 900
cgcgctggac accatgtgga tcttgggtct gaggaagaa tttgaggaag 950
ccaggaagtg ggtgtcgaag aagttacact ttgaaaagga cgtggacgtc 1000
aacctgtttg agagcacgat ccgcatcctg ggggggctcc tgagtgccta 1050
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tcacagggga ccgcaaatac caggactggg gctgggagat tctgcagagc 1900
ttcagccgat tcacacgggt cccctcgggt ggctattctt ccatcaacaa 1950
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tctgggggga gacgtcaag tatctgttct tgctcttctc cgatgacca 2050
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gcctatctgg acccctgcct aggggtgatg gctgctggtg tggggacttc 2150
 ggggtgggcag aggcaccttg ctgggtctgt ggcattttcc aagggccac 2200
 gtagcaccgg caaccgcaa gtggcccagg ctctgaactg gctctgggct 2250
 cctcctcgtc tctgctttaa tcaggacacc gtgaggacaa gtgaggccgt 2300
 cagtcttggt gtgatgcggg gtgggctggg ccgctggagc ctccgcctgc 2350
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 ggtgaccgag tggacagccc aggggtgcagc tctgcccggt ctctgaagc 2500
 ctcagatgtc cccaatcaa gggctctggag gggctgccgt gactccagag 2550
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 cctcctggcc gcccgcagg gggcttggag ggctggacgg caagtccgtc 2650
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 ttgatttgct ctaaccgcaa 2720

<210> 12
 <211> 699
 <212> PRT
 <213> Homo sapiens

<220>
 <221> TRANSMEM
 <222> 21-40 and 84-105
 <223> Transmembrane Domain (type II)

<400> 12
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 1 5 10 15
 Gln Ser Asp Phe Leu Thr Pro Pro Val Gly Gly Ala Pro Trp Ala
 20 25 30
 Val Ala Thr Thr Val Val Met Tyr Pro Pro Pro Pro Pro Pro
 35 40 45
 His Arg Asp Phe Ile Ser Val Thr Leu Ser Phe Gly Glu Ser Tyr
 50 55 60
 Asp Asn Ser Lys Ser Trp Arg Arg Arg Ser Cys Trp Arg Lys Trp
 65 70 75
 Lys Gln Leu Ser Arg Leu Gln Arg Asn Met Ile Leu Phe Leu Leu
 80 85 90
 Ala Phe Leu Leu Phe Cys Gly Leu Leu Phe Tyr Ile Asn Leu Ala
 95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | His | Trp | Lys | Ala | Leu | Ala | Phe | Arg | Leu | Glu | Glu | Glu | Gln | Lys | 110 | 115 | 120 |
| Met | Arg | Pro | Glu | Ile | Ala | Gly | Leu | Lys | Pro | Ala | Asn | Pro | Pro | Val | 125 | 130 | 135 |
| Leu | Pro | Ala | Pro | Gln | Lys | Ala | Asp | Thr | Asp | Pro | Glu | Asn | Leu | Pro | 140 | 145 | 150 |
| Glu | Ile | Ser | Ser | Gln | Lys | Thr | Gln | Arg | His | Ile | Gln | Arg | Gly | Pro | 155 | 160 | 165 |
| Pro | His | Leu | Gln | Ile | Arg | Pro | Pro | Ser | Gln | Asp | Leu | Lys | Asp | Gly | 170 | 175 | 180 |
| Thr | Gln | Glu | Glu | Ala | Thr | Lys | Arg | Gln | Glu | Ala | Pro | Val | Asp | Pro | 185 | 190 | 195 |
| Arg | Pro | Glu | Gly | Asp | Pro | Gln | Arg | Thr | Val | Ile | Ser | Trp | Arg | Gly | 200 | 205 | 210 |
| Ala | Val | Ile | Glu | Pro | Glu | Gln | Gly | Thr | Glu | Leu | Pro | Ser | Arg | Arg | 215 | 220 | 225 |
| Ala | Glu | Val | Pro | Thr | Lys | Pro | Pro | Leu | Pro | Pro | Ala | Arg | Thr | Gln | 230 | 235 | 240 |
| Gly | Thr | Pro | Val | His | Leu | Asn | Tyr | Arg | Gln | Lys | Gly | Val | Ile | Asp | 245 | 250 | 255 |
| Val | Phe | Leu | His | Ala | Trp | Lys | Gly | Tyr | Arg | Lys | Phe | Ala | Trp | Gly | 260 | 265 | 270 |
| His | Asp | Glu | Leu | Lys | Pro | Val | Ser | Arg | Ser | Phe | Ser | Glu | Trp | Phe | 275 | 280 | 285 |
| Gly | Leu | Gly | Leu | Thr | Leu | Ile | Asp | Ala | Leu | Asp | Thr | Met | Trp | Ile | 290 | 295 | 300 |
| Leu | Gly | Leu | Arg | Lys | Glu | Phe | Glu | Glu | Ala | Arg | Lys | Trp | Val | Ser | 305 | 310 | 315 |
| Lys | Lys | Leu | His | Phe | Glu | Lys | Asp | Val | Asp | Val | Asn | Leu | Phe | Glu | 320 | 325 | 330 |
| Ser | Thr | Ile | Arg | Ile | Leu | Gly | Gly | Leu | Leu | Ser | Ala | Tyr | His | Leu | 335 | 340 | 345 |
| Ser | Gly | Asp | Ser | Leu | Phe | Leu | Arg | Lys | Ala | Glu | Asp | Phe | Gly | Asn | 350 | 355 | 360 |
| Arg | Leu | Met | Pro | Ala | Phe | Arg | Thr | Pro | Ser | Lys | Ile | Pro | Tyr | Ser | 365 | 370 | 375 |
| Asp | Val | Asn | Ile | Gly | Thr | Gly | Val | Ala | His | Pro | Pro | Arg | Trp | Thr | 380 | 385 | 390 |
| Ser | Asp | Ser | Thr | Val | Ala | Glu | Val | Thr | Ser | Ile | Gln | Leu | Glu | Phe | | | |

| 395 | | | | | 400 | | | | | 405 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Leu | Ser | Arg | Leu | Thr | Gly | Asp | Lys | Lys | Phe | Gln | Glu | Ala |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Val | Glu | Lys | Val | Thr | Gln | His | Ile | His | Gly | Leu | Ser | Gly | Lys | Lys |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Asp | Gly | Leu | Val | Pro | Met | Phe | Ile | Asn | Thr | His | Ser | Gly | Leu | Phe |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Thr | His | Leu | Gly | Val | Phe | Thr | Leu | Gly | Ala | Arg | Ala | Asp | Ser | Tyr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Tyr | Glu | Tyr | Leu | Leu | Lys | Gln | Trp | Ile | Gln | Gly | Gly | Lys | Gln | Glu |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Gln | Leu | Leu | Glu | Asp | Tyr | Val | Glu | Ala | Ile | Glu | Gly | Val | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Thr | His | Leu | Leu | Arg | His | Ser | Glu | Pro | Ser | Lys | Leu | Thr | Phe | Val |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Glu | Leu | Ala | His | Gly | Arg | Phe | Ser | Ala | Lys | Met | Asp | His | Leu |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Val | Cys | Phe | Leu | Pro | Gly | Thr | Leu | Ala | Leu | Gly | Val | Tyr | His | Gly |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Pro | Ala | Ser | His | Met | Glu | Leu | Ala | Gln | Glu | Leu | Met | Glu | Thr |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Cys | Tyr | Gln | Met | Asn | Arg | Gln | Met | Glu | Thr | Gly | Leu | Ser | Pro | Glu |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Ile | Val | His | Phe | Asn | Leu | Tyr | Pro | Gln | Pro | Gly | Arg | Arg | Asp | Val |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Glu | Val | Lys | Pro | Ala | Asp | Arg | His | Asn | Leu | Leu | Arg | Pro | Glu | Thr |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Val | Glu | Ser | Leu | Phe | Tyr | Leu | Tyr | Arg | Val | Thr | Gly | Asp | Arg | Lys |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Tyr | Gln | Asp | Trp | Gly | Trp | Glu | Ile | Leu | Gln | Ser | Phe | Ser | Arg | Phe |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Thr | Arg | Val | Pro | Ser | Gly | Gly | Tyr | Ser | Ser | Ile | Asn | Asn | Val | Gln |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Asp | Pro | Gln | Lys | Pro | Glu | Pro | Arg | Asp | Lys | Met | Glu | Ser | Phe | Phe |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Leu | Gly | Glu | Thr | Leu | Lys | Tyr | Leu | Phe | Leu | Leu | Phe | Ser | Asp | Asp |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Pro | Asn | Leu | Leu | Ser | Leu | Asp | Ala | Tyr | Val | Phe | Asn | Thr | Glu | Ala |
| | | | | 680 | | | | | 685 | | | | | 690 |

His Pro Leu Pro Ile Trp Thr Pro Ala
695

<210> 13
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 13
cgccagaagg gcgtgattga cgtc 24

<210> 14
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 14
ccatccttct tcccagacag gccg 24

<210> 15
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 15
gaagcctgtg tccaggtcct tcagtgagtg gtttggcctc ggtc 44

<210> 16
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 16
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cccatgcgcc gccgcctctc cgcacgatgt tccoctcgcg gaggaagcg 100
gcgcagctgc cctgggagga cggcaggtcc gggttgctct ccggcggcct 150
ccctcggaag tgttccgtct tccacctgtt cgtggcctgc ctctcgctgg 200
gcttcttctc cctactctgg ctgcagctca gctgctctgg ggacgtggcc 250

cgggcagtca ggggacaagg gcaggagacc tcgggccctc cccgtgcctg 300
 cccccagag ccgccccctg agcactggga agaagacgca tcctggggcc 350
 cccaccgcct ggcagtgtg gtgcccttcc gogaacgctt cgaggagctc 400
 ctggtttctg tgccccacat gcgccgcttc ctgagcagga agaagatccg 450
 gcaccacatc tacgtgctca accagggtgga ccacttcagg ttcaaccggg 500
 cagcgctcat caacgtgggc ttctggaga gcagcaacag cacggactac 550
 attgccatgc acgacgttga cctgtccct ctcaacgagg agctggacta 600
 tggctttcct gaggtgggc ccttccacgt ggcctccccg gagctccacc 650
 ctctctacca ctacaagacc tatgtcggcg gcctcctgct gctctccaag 700
 cagcactacc ggctgtgcaa tgggatgtcc aaccgcttct ggggtgggg 750
 ccgcgaggac gacgagttct accggcgcat taaggagct gggctccagc 800
 ttttcgccc ctcggaatc acaactgggt acaagacatt tcgccacctg 850
 catgaccag cctggcgaa gagggaccag aagcgcatcg cagctcaaaa 900
 acaggagcag ttcaagggtg acaggaggagg aggcctgaac actgtgaagt 950
 accatgtggc ttcccgact gccctgtctg tggggggggc ccctgcact 1000
 gtctcaaca tcattgttga ctgtgacaag accgccacac cctggtgcac 1050
 attcagctga gctggatgga cagtgaggaa gcctgtacct acaggccata 1100
 ttgctcaggc tcaggacaag gcctcaggtc gtggggccag ctctgacagg 1150
 atgtggagtg gccaggacca agacagcaag ctacgcaatt gcagccacc 1200
 ggccgccaag gcaggcttg gctggggccag gacacgtggg gtgcctggga 1250
 cgctgcttgc catgcacagt gatcagagag aggctggggg gtgtcctgtc 1300
 cgggaccccc cctgccttcc tgctaccct actctgacct ccttcacgtg 1350
 cccaggcctg tgggtagtgg ggagggtga acaggacaac ctctcatcac 1400
 cctactctga cctccttcac gtgccaggc ctgtgggtag tggggagggc 1450
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 aaaaaaaaaa aaaaaaaaaa aaaa 1524

<210> 17
 <211> 327
 <212> PRT
 <213> Homo sapiens
 <220>

<221> sig_peptide
 <222> 1-42
 <223> Signal peptide.

 <220>
 <221> misc_feature
 <222> 19-25, 65-71, 247-253, 285-291, 303-310
 <223> N-myristoylation site.

 <220>
 <221> misc_feature
 <222> 27-31
 <223> cAMP- and cGMP-dependent protein kinase phosphorylation site.

 <220>
 <221> TRANSMEM
 <222> 29-49
 <223> Transmembrane domain (type II).

<220>
 <221> misc_feature
 <222> 154-158
 <223> N-glycosylation site.

 <220>
 <221> misc_feature
 <222> 226-233
 <223> Tyrosine kinase phosphorylation site.

<400> 17
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 Gly Arg Ser Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser
 20 25 30
 Val Phe His Leu Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser
 35 40 45
 Leu Leu Trp Leu Gln Leu Ser Cys Ser Gly Asp Val Ala Arg Ala
 50 55 60
 Val Arg Gly Gln Gly Gln Glu Thr Ser Gly Pro Pro Arg Ala Cys
 65 70 75
 Pro Pro Glu Pro Pro Pro Glu His Trp Glu Glu Asp Ala Ser Trp
 80 85 90
 Gly Pro His Arg Leu Ala Val Leu Val Pro Phe Arg Glu Arg Phe
 95 100 105
 Glu Glu Leu Leu Val Phe Val Pro His Met Arg Arg Phe Leu Ser
 110 115 120
 Arg Lys Lys Ile Arg His His Ile Tyr Val Leu Asn Gln Val Asp
 125 130 135
 His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn Val Gly Phe Leu

| 140 | 145 | 150 |
|-------------------------------------|-------------------------|-----|
| Glu Ser Ser Asn Ser Thr Asp Tyr Ile | Ala Met His Asp Val Asp | |
| 155 | 160 | 165 |
| Leu Leu Pro Leu Asn Glu Glu Leu Asp | Tyr Gly Phe Pro Glu Ala | |
| 170 | 175 | 180 |
| Gly Pro Phe His Val Ala Ser Pro Glu | Leu His Pro Leu Tyr His | |
| 185 | 190 | 195 |
| Tyr Lys Thr Tyr Val Gly Gly Ile Leu | Leu Leu Ser Lys Gln His | |
| 200 | 205 | 210 |
| Tyr Arg Leu Cys Asn Gly Met Ser Asn | Arg Phe Trp Gly Trp Gly | |
| 215 | 220 | 225 |
| Arg Glu Asp Asp Glu Phe Tyr Arg Arg | Ile Lys Gly Ala Gly Leu | |
| 230 | 235 | 240 |
| Gln Leu Phe Arg Pro Ser Gly Ile Thr | Thr Gly Tyr Lys Thr Phe | |
| 245 | 250 | 255 |
| Arg His Leu His Asp Pro Ala Trp Arg | Lys Arg Asp Gln Lys Arg | |
| 260 | 265 | 270 |
| Ile Ala Ala Gln Lys Gln Glu Gln Phe | Lys Val Asp Arg Glu Gly | |
| 275 | 280 | 285 |
| Gly Leu Asn Thr Val Lys Tyr His Val | Ala Ser Arg Thr Ala Leu | |
| 290 | 295 | 300 |
| Ser Val Gly Gly Ala Pro Cys Thr Val | Leu Asn Ile Met Leu Asp | |
| 305 | 310 | 315 |
| Cys Asp Lys Thr Ala Thr Pro Trp Cys | Thr Phe Ser | |
| 320 | 325 | |

<210> 18
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 18
 gcgaacgctt cgaggagtcg tgg 23

<210> 19
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence

<222> 1-24
<223> Synthetic construct

<400> 19
gcagtgcggg aagccacatg gtac 24

<210> 20
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 20
cttcctgagc aggaagaaga tccggcacca catctacgtg ctcaac 46

<210> 21
<211> 494
<212> DNA
<213> Homo sapiens

<400> 21
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gactggtcgg tgcccagaaa gtctcttctg ccactgacgc ccccatcagg 150
gattgggcct tctttccccc ttcttttctg tgtctcctgc ctcatcgcc 200
tgccatgacc tgcagccaag ccagccccog tggggaaggg gagaaagtgg 250
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ggctaggggg gctgccttat ttaaagtggg tgtttatgat tcttatacta 350
atttatacaa agatattaag gccctgttca ttaagaaatt gttcccttcc 400
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taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494

<210> 22
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-15
<223> Signal peptide.

<220>
<221> misc_feature
<222> 3-18

<223> Growth factor and cytokines receptors family.

<400> 22

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 1           5           10           15
Ser Cys Leu Glu Trp Gly Leu Val Gly Ala Gln Lys Val Ser Ser
          20           25           30
Ala Thr Asp Ala Pro Ile Arg Asp Trp Ala Phe Phe Pro Pro Ser
          35           40           45
Phe Leu Cys Leu Leu Pro His Arg Pro Ala Met Thr Cys Ser Gln
          50           55           60
Ala Gln Pro Arg Gly Glu Gly Glu Lys Val Gly Asp Gly
          65           70
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<210> 23

<211> 2883

<212> DNA

<213> Homo sapiens

<400> 23

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ggctccgggg cggcccgcta ggccagtgcg ccgcgcgctg ccccgaggc 200
cccgggccgc agcatggagc caccggagc ccggcggggc cgcgcgcagc 250
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ggcggcgggc gcggcgggc cgcgcgctg cccgcgggt gcaagcacga 350
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gaagaatggc tcattttctg ggttaagtct cttgaaaga ttggacctcc 550
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 gagggaaacc tggataagca gctgagcttt aagtgcaatg tttcaaatac 2000
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 tcaataatat cacaaacaat attccagtca ttttaatggc tgcataataa 2800
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<210> 24
 <211> 616
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-33
 <223> Signal peptide.

<220>
 <221> TRANSMEM
 <222> 13-40
 <223> Transmembrane domain (type II).

<400> 24
 Met Glu Pro Pro Gly Arg Arg Arg Gly Arg Ala Gln Pro Pro Leu
 1 5 10 15
 Leu Leu Pro Leu Ser Leu Leu Ala Leu Leu Ala Leu Leu Gly Gly
 20 25 30
 Gly Gly Gly Gly Gly Ala Ala Ala Leu Pro Ala Gly Cys Lys His
 35 40 45
 Asp Gly Arg Pro Arg Gly Ala Gly Arg Ala Ala Gly Ala Ala Glu
 50 55 60
 Gly Lys Val Val Cys Ser Ser Leu Glu Leu Ala Gln Val Leu Pro
 65 70 75
 Pro Asp Thr Leu Pro Asn Arg Thr Val Thr Leu Ile Leu Ser Asn
 80 85 90

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Asn | Lys | Ile | Ser | Glu | Leu | Lys | Asn | Gly | Ser | Phe | Ser | Gly | Leu | Ser | | 95 | 100 | 105 |
| Leu | Leu | Glu | Arg | Leu | Asp | Leu | Arg | Asn | Asn | Leu | Ile | Ser | Ser | Ile | | 110 | 115 | 120 |
| Asp | Pro | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Ser | Leu | Lys | Arg | Leu | Asp | | 125 | 130 | 135 |
| Leu | Thr | Asn | Asn | Arg | Ile | Gly | Cys | Leu | Asn | Ala | Asp | Ile | Phe | Arg | | 140 | 145 | 150 |
| Gly | Leu | Thr | Asn | Leu | Val | Arg | Leu | Asn | Leu | Ser | Gly | Asn | Leu | Phe | | 155 | 160 | 165 |
| Ser | Ser | Leu | Ser | Gln | Gly | Thr | Phe | Asp | Tyr | Leu | Ala | Ser | Leu | Arg | | 170 | 175 | 180 |
| Ser | Leu | Glu | Phe | Gln | Thr | Glu | Tyr | Leu | Leu | Cys | Asp | Cys | Asn | Ile | | 185 | 190 | 195 |
| Leu | Trp | Met | His | Arg | Trp | Val | Lys | Glu | Lys | Asn | Ile | Thr | Val | Arg | | 200 | 205 | 210 |
| Asp | Thr | Arg | Cys | Val | Tyr | Pro | Lys | Ser | Leu | Gln | Ala | Gln | Pro | Val | | 215 | 220 | 225 |
| Thr | Gly | Val | Lys | Gln | Glu | Leu | Leu | Thr | Cys | Asp | Pro | Pro | Leu | Glu | | 230 | 235 | 240 |
| Leu | Pro | Ser | Phe | Tyr | Met | Thr | Pro | Ser | His | Arg | Gln | Val | Val | Phe | | 245 | 250 | 255 |
| Glu | Gly | Asp | Ser | Leu | Pro | Phe | Gln | Cys | Met | Ala | Ser | Tyr | Ile | Asp | | 260 | 265 | 270 |
| Gln | Asp | Met | Gln | Val | Leu | Trp | Tyr | Gln | Asp | Gly | Arg | Ile | Val | Glu | | 275 | 280 | 285 |
| Thr | Asp | Glu | Ser | Gln | Gly | Ile | Phe | Val | Glu | Lys | Asn | Met | Ile | His | | 290 | 295 | 300 |
| Asn | Cys | Ser | Leu | Ile | Ala | Ser | Ala | Leu | Thr | Ile | Ser | Asn | Ile | Gln | | 305 | 310 | 315 |
| Ala | Gly | Ser | Thr | Gly | Asn | Trp | Gly | Cys | His | Val | Gln | Thr | Lys | Arg | | 320 | 325 | 330 |
| Gly | Asn | Asn | Thr | Arg | Thr | Val | Asp | Ile | Val | Val | Leu | Glu | Ser | Ser | | 335 | 340 | 345 |
| Ala | Gln | Tyr | Cys | Pro | Pro | Glu | Arg | Val | Val | Asn | Asn | Lys | Gly | Asp | | 350 | 355 | 360 |
| Phe | Arg | Trp | Pro | Arg | Thr | Leu | Ala | Gly | Ile | Thr | Ala | Tyr | Leu | Gln | | 365 | 370 | 375 |
| Cys | Thr | Arg | Asn | Thr | His | Gly | Ser | Gly | Ile | Tyr | Pro | Gly | Asn | Pro | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 380 | | 385 | | 390 |
| Gln Asp Glu Arg | Lys Ala Trp Arg Arg | Cys Asp Arg Gly Gly | Phe | | |
| | 395 | 400 | 405 | | |
| Trp Ala Asp Asp | Asp Tyr Ser Arg Cys | Gln Tyr Ala Asn Asp | Val | | |
| | 410 | 415 | 420 | | |
| Thr Arg Val Leu | Tyr Met Phe Asn Gln | Met Pro Leu Asn Leu | Thr | | |
| | 425 | 430 | 435 | | |
| Asn Ala Val Ala | Thr Ala Arg Gln Leu | Leu Ala Tyr Thr Val | Glu | | |
| | 440 | 445 | 450 | | |
| Ala Ala Asn Phe | Ser Asp Lys Met Asp | Val Ile Phe Val Ala | Glu | | |
| | 455 | 460 | 465 | | |
| Met Ile Glu Lys | Phe Gly Arg Phe Thr | Lys Glu Glu Lys Ser | Lys | | |
| | 470 | 475 | 480 | | |
| Glu Leu Gly Asp | Val Met Val Asp Ile | Ala Ser Asn Ile Met | Leu | | |
| | 485 | 490 | 495 | | |
| Ala Asp Glu Arg | Val Leu Trp Leu Ala | Gln Arg Glu Ala Lys | Ala | | |
| | 500 | 505 | 510 | | |
| Cys Ser Arg Ile | Val Gln Cys Leu Gln | Arg Ile Ala Thr Tyr | Arg | | |
| | 515 | 520 | 525 | | |
| Leu Ala Gly Gly | Ala His Val Tyr Ser | Thr Tyr Ser Pro Asn | Ile | | |
| | 530 | 535 | 540 | | |
| Ala Leu Glu Ala | Tyr Val Ile Lys Ser | Thr Gly Phe Thr Gly | Met | | |
| | 545 | 550 | 555 | | |
| Thr Cys Thr Val | Phe Gln Lys Val Ala | Ala Ser Asp Arg Thr | Gly | | |
| | 560 | 565 | 570 | | |
| Leu Ser Asp Tyr | Gly Arg Arg Asp Pro | Glu Gly Asn Leu Asp | Lys | | |
| | 575 | 580 | 585 | | |
| Gln Leu Ser Phe | Lys Cys Asn Val Ser | Asn Thr Phe Ser Ser | Leu | | |
| | 590 | 595 | 600 | | |
| Ala Leu Lys Val | Cys Tyr Ile Leu Gln | Ser Phe Lys Thr Ile | Tyr | | |
| | 605 | 610 | 615 | | |

Ser

<210> 25
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24

<223> Synthetic construct

<400> 25

gaggactcac caatctgggtt cggc 24

<210> 26

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 26

aactggaaag gaaggctgtc tccc 24

<210> 27

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-50

<223> Synthetic construct.

<400> 27

gtaaaggaga agaacatcac ggtacgggat accaggtgtg tttatcctaa 50

<210> 28

<211> 683

<212> DNA

<213> Homo sapiens

<400> 28

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gcagaggctt cgtgacggag ttatcagaga cattgagagg caaattcgga 150

aaaaagaaaa cattcgtctt ttgggagAAC agattatctt gactgagcaa 200

cttgaagcag aaagagagaa gatgttattg gcaaaaggat ctcaaaaatc 250

atgacttgaa tgtgaaatat ctgttggaca gacaacacga gtttgtgtgt 300

gtgtgttgat ggagagtagc ttagtagtat cttcatcttt ttttttggtc 350

actgtccttt taaacttgat caaataaagg acagtgggtc atataagtta 400

ctgctttcag ggtcccttat atctgaataa aggagtgtgg gcagacactt 450

tttggaagag tctgtctggg tgatcctggt agaagcccca ttagggtcac 500

tgtccagtgc ttaggggtgt tactgagaag cactgccgag cttgtgagaa 550

ggaagggatg gatagtagca tccacctgag tagtctgatc agtcggcatg 600
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 gtggaggagg agacgctcct gatcgtcgaa tcc 683

<210> 29
 <211> 81
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-21
 <223> Signal peptide.

<400> 29
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 1 5 10 15
 Thr Ala Ala Thr Val Ala Gly Val His Val Lys Gln Gln Trp Asp
 20 25 30
 Gln Gln Arg Leu Arg Asp Gly Val Ile Arg Asp Ile Glu Arg Gln
 35 40 45
 Ile Arg Lys Lys Glu Asn Ile Arg Leu Leu Gly Glu Gln Ile Ile
 50 55 60
 Leu Thr Glu Gln Leu Glu Ala Glu Arg Glu Lys Met Leu Leu Ala
 65 70 75
 Lys Gly Ser Gln Lys Ser
 80

<210> 30
 <211> 2128
 <212> DNA
 <213> Homo sapiens

<400> 30
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 tccgtggatt cctctgctaa gaccgctgcc atgccagtga cggtaaccocg 150
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attaaaaaac atatatatat atatatttgg aggtcagtaa tttccaatgg 1950
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 cagccttgcc agagattggc tccagaattt ttgccaggct tacagaacac 2050
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 cccaactatt ctctgtggta tgaaaaag 2128

<210> 31
 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 31

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Val | Thr | Val | Thr | Arg | Thr | Thr | Ile | Thr | Thr | Thr | Thr | Thr | 1 | 5 | 10 | 15 |
| Ser | Ser | Ser | Gly | Leu | Gly | Ser | Pro | Met | Ile | Val | Gly | Ser | Pro | Arg | 20 | 25 | 30 | |
| Ala | Leu | Thr | Gln | Pro | Leu | Gly | Leu | Leu | Arg | Leu | Leu | Gln | Leu | Val | 35 | 40 | 45 | |
| Ser | Thr | Cys | Val | Ala | Phe | Ser | Leu | Val | Ala | Ser | Val | Gly | Ala | Trp | 50 | 55 | 60 | |
| Thr | Gly | Ser | Met | Gly | Asn | Trp | Ser | Met | Phe | Thr | Trp | Cys | Phe | Cys | 65 | 70 | 75 | |
| Phe | Ser | Val | Thr | Leu | Ile | Ile | Leu | Ile | Val | Glu | Leu | Cys | Gly | Leu | 80 | 85 | 90 | |
| Gln | Ala | Arg | Phe | Pro | Leu | Ser | Trp | Arg | Asn | Phe | Pro | Ile | Thr | Phe | 95 | 100 | 105 | |
| Ala | Cys | Tyr | Ala | Ala | Leu | Phe | Cys | Leu | Ser | Ala | Ser | Ile | Ile | Tyr | 110 | 115 | 120 | |
| Pro | Thr | Thr | Tyr | Val | Gln | Phe | Leu | Ser | His | Gly | Arg | Ser | Arg | Asp | 125 | 130 | 135 | |
| His | Ala | Ile | Ala | Ala | Thr | Phe | Phe | Ser | Cys | Ile | Ala | Cys | Val | Ala | 140 | 145 | 150 | |
| Tyr | Ala | Thr | Glu | Val | Ala | Trp | Thr | Arg | Ala | Arg | Pro | Gly | Glu | Ile | 155 | 160 | 165 | |
| Thr | Gly | Tyr | Met | Ala | Thr | Val | Pro | Gly | Leu | Leu | Lys | Val | Leu | Glu | 170 | 175 | 180 | |
| Thr | Phe | Val | Ala | Cys | Ile | Ile | Phe | Ala | Phe | Ile | Ser | Asp | Pro | Asn | 185 | 190 | 195 | |
| Leu | Tyr | Gln | His | Gln | Pro | Ala | Leu | Glu | Trp | Cys | Val | Ala | Val | Tyr | 200 | 205 | 210 | |

Ala Ile Cys Phe Ile Leu Ala Ala Ile Ala Ile Leu Leu Asn Leu
215 220 225

Gly Glu Cys Thr Asn Val Leu Pro Ile Pro Phe Pro Ser Phe Leu
230 235 240

Ser Gly Leu Ala Leu Leu Ser Val Leu Leu Tyr Ala Thr Ala Leu
245 250 255

Val Leu Trp Pro Leu Tyr Gln Phe Asp Glu Lys Tyr Gly Gly Gln
260 265 270

Pro Arg Arg Ser Arg Asp Val Ser Cys Ser Arg Ser His Ala Tyr
275 280 285

Tyr Val Cys Ala Trp Asp Arg Arg Leu Ala Val Ala Ile Leu Thr
290 295 300

Ala Ile Asn Leu Leu Ala Tyr Val Ala Asp Leu Val His Ser Ala
305 310 315

His Leu Val Phe Val Lys Val
320

<210> 32

<211> 3680

<212> DNA

<213> Homo sapiens

<400> 32

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tttcaccatg ttggccaggc tggctcttgaa ctctgacact catgatccgc 100

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ctggccagcc tatgcatttt taagaaatta ttctgtatta ggtgctgtgc 200

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aaagaccagt gagggagacc aacaagaaac aggaaatgca aaagagacca 300

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<210> 33

<211> 335

<212> PRT

<213> Homo sapiens

<400> 33

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Leu | Ala | Thr | Leu | Ser | Phe | Leu | Leu | Pro | Phe | Ala | His | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Thr | Val | Ser | Cys | Glu | Tyr | Met | Leu | Gly | Ser | Pro | Leu | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Ala | Gln | Val | Asn | Leu | Ser | Pro | Phe | Ser | His | Pro | Lys | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Met | Asp | Pro | Asn | Tyr | Cys | His | Pro | Ser | Thr | Ser | Leu | His | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Leu | Ala | Trp | Ser | Phe | Thr | Arg | Leu | Leu | His | Pro | Pro | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gly | Ile | Ser | Gln | Val | Val | Lys | Asp | His | Val | Thr | Lys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Met | Ala | Gln | Gly | Arg | Val | Ala | His | Leu | Ile | Glu | Trp | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Ser | Lys | Pro | Ser | Asp | Ser | Pro | Ala | Ala | Leu | Glu | Ser | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Ser | Tyr | Ser | Asp | Leu | Ser | Glu | Gly | Glu | Gln | Glu | Ala | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Ala | Gly | Val | Ala | Glu | Gln | Phe | Ala | Ile | Ala | Glu | Ala | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Ala | Trp | Ser | Ser | Val | Asp | Gly | Glu | Asp | Ser | Thr | Asp | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Tyr | Asp | Glu | Asp | Phe | Ala | Gly | Gly | Met | Asp | Thr | Asp | Met | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gln | Leu | Pro | Leu | Gly | Pro | His | Leu | Gln | Asp | Leu | Phe | Thr | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Arg | Phe | Ser | Arg | Pro | Val | Arg | Gln | Gly | Ser | Val | Glu | Pro | Glu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Cys | Ser | Gln | Thr | Val | Ser | Pro | Asp | Thr | Leu | Cys | Ser | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Ser | Leu | Glu | Asp | Gly | Leu | Leu | Gly | Ser | Pro | Ala | Arg | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

Ala Ser Gln Leu Leu Gly Asp Glu Leu Leu Leu Ala Lys Leu Pro
245 250 255

Pro Ser Arg Glu Ser Ala Phe Arg Ser Leu Gly Pro Leu Glu Ala
260 265 270

Gln Asp Ser Leu Tyr Asn Ser Pro Leu Thr Glu Ser Cys Leu Ser
275 280 285

Pro Ala Glu Glu Glu Pro Ala Pro Cys Lys Asp Cys Gln Pro Leu
290 295 300

Cys Pro Pro Leu Thr Gly Ser Trp Glu Arg Gln Arg Gln Ala Ser
305 310 315

Asp Leu Ala Ser Ser Gly Val Val Ser Leu Asp Glu Asp Glu Ala
320 325 330

Glu Pro Glu Glu Gln
335

<210> 34
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct

<400> 34
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<210> 35
<211> 50
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<213> Artificial

<220>
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<222> 1-50
<223> Synthetic construct.

<400> 35
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<210> 36
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 36

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<210> 37
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 <212> DNA
 <213> Artificial

<220>
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 <222> 1-23
 <223> Synthetic construct.

<400> 37
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<210> 38
 <211> 39
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
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 <223> Synthetic construct.

<400> 38
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<210> 39
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<220>
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 <223> Synthetic construct.

<400> 39
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<210> 40
 <211> 2084
 <212> DNA
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<210> 41
<211> 334
<212> PRT
<213> Homo sapiens

<400> 41

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Ala | Leu | Ala | Lys | Ile | Leu | Leu | Ile | Ser | Thr | Leu | Phe | Tyr | 1 | 5 | 10 | 15 |
| Ser | Leu | Leu | Ser | Gly | Ser | His | Gly | Lys | Glu | Asn | Gln | Asp | Ile | Asn | 20 | 25 | 30 | |
| Thr | Thr | Gln | Asn | Ile | Ala | Glu | Val | Phe | Lys | Thr | Met | Glu | Asn | Lys | 35 | 40 | 45 | |
| Pro | Ile | Ser | Leu | Glu | Ser | Glu | Ala | Asn | Leu | Asn | Ser | Asp | Lys | Glu | 50 | 55 | 60 | |
| Asn | Ile | Thr | Thr | Ser | Asn | Leu | Lys | Ala | Ser | His | Ser | Pro | Pro | Leu | 65 | 70 | 75 | |
| Asn | Leu | Pro | Asn | Asn | Ser | His | Gly | Ile | Thr | Asp | Phe | Ser | Ser | Asn | 80 | 85 | 90 | |
| Ser | Ser | Ala | Glu | His | Ser | Leu | Gly | Ser | Leu | Lys | Pro | Thr | Ser | Thr | 95 | 100 | 105 | |
| Ile | Ser | Thr | Ser | Pro | Pro | Leu | Ile | His | Ser | Phe | Val | Ser | Lys | Val | 110 | 115 | 120 | |
| Pro | Trp | Asn | Ala | Pro | Ile | Ala | Asp | Glu | Asp | Leu | Leu | Pro | Ile | Ser | 125 | 130 | 135 | |
| Ala | His | Pro | Asn | Ala | Thr | Pro | Ala | Leu | Ser | Ser | Glu | Asn | Phe | Thr | 140 | 145 | 150 | |
| Trp | Ser | Leu | Val | Asn | Asp | Thr | Val | Lys | Thr | Pro | Asp | Asn | Ser | Ser | 155 | 160 | 165 | |
| Ile | Thr | Val | Ser | Ile | Leu | Ser | Ser | Glu | Pro | Thr | Ser | Pro | Ser | Val | 170 | 175 | 180 | |
| Thr | Pro | Leu | Ile | Val | Glu | Pro | Ser | Gly | Trp | Leu | Thr | Thr | Asn | Ser | 185 | 190 | 195 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asp Ser Phe Thr | Gly Phe Thr Pro Tyr | Gln Glu Lys Thr Thr | Leu |
| 200 | | 205 | 210 |
| Gln Pro Thr Leu | Lys Phe Thr Asn Asn | Ser Lys Leu Phe Pro | Asn |
| 215 | | 220 | 225 |
| Thr Ser Asp Pro | Gln Lys Glu Asn Arg | Asn Thr Gly Ile Val | Phe |
| 230 | | 235 | 240 |
| Gly Ala Ile Leu | Gly Ala Ile Leu Gly | Val Ser Leu Leu Thr | Leu |
| 245 | | 250 | 255 |
| Val Gly Tyr Leu | Leu Cys Gly Lys Arg | Lys Thr Asp Ser Phe | Ser |
| 260 | | 265 | 270 |
| His Arg Arg Leu | Tyr Asp Asp Arg Asn | Glu Pro Val Leu Arg | Leu |
| 275 | | 280 | 285 |
| Asp Asn Ala Pro | Glu Pro Tyr Asp Val | Ser Phe Gly Asn Ser | Ser |
| 290 | | 295 | 300 |
| Tyr Tyr Asn Pro | Thr Leu Asn Asp Ser | Ala Met Pro Glu Ser | Glu |
| 305 | | 310 | 315 |
| Glu Asn Ala Arg | Asp Gly Ile Pro Met | Asp Asp Ile Pro Pro | Leu |
| 320 | | 325 | 330 |
| Arg Thr Ser Val | | | |

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 <211> 1594
 <212> DNA
 <213> Homo sapiens

<400> 42
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 cccctaccgc cgtgcaaaag gaggaggcgc ggcaagacgt ggaggccctc 150
 ctgagccgca cggtcagaac tcagatactg accggcaagg agctccgagt 200
 tgccaccag gaaaaagagg gctcctctgg gagatgtatg cttactctct 250
 taggcctttc attcatcttg gcaggactta ttgttggtgg agcctgcatt 300
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<210> 43

<211> 263

<212> PRT

<213> Homo sapiens

<400> 43

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Lys | Ile | Ala | Phe | Asn | Thr | Pro | Thr | Ala | Val | Gln | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Arg | Gln | Asp | Val | Glu | Ala | Leu | Leu | Ser | Arg | Thr | Val | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Ile | Leu | Thr | Gly | Lys | Glu | Leu | Arg | Val | Ala | Thr | Gln | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Gly | Ser | Ser | Gly | Arg | Cys | Met | Leu | Thr | Leu | Leu | Gly | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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|-------------------------------------|-------------------------|-----|
| 50 | 55 | 60 |
| Ser Phe Ile Leu Ala Gly Leu Ile Val | Gly Gly Ala Cys Ile Tyr | |
| 65 | 70 | 75 |
| Lys Tyr Phe Met Pro Lys Ser Thr Ile | Tyr Arg Gly Glu Met Cys | |
| 80 | 85 | 90 |
| Phe Phe Asp Ser Glu Asp Pro Ala Asn | Ser Leu Arg Gly Gly Glu | |
| 95 | 100 | 105 |
| Pro Asn Phe Leu Pro Val Thr Glu Glu | Ala Asp Ile Arg Glu Asp | |
| 110 | 115 | 120 |
| Asp Asn Ile Ala Ile Ile Asp Val Pro | Val Pro Ser Phe Ser Asp | |
| 125 | 130 | 135 |
| Ser Asp Pro Ala Ala Ile Ile His Asp | Phe Glu Lys Gly Met Thr | |
| 140 | 145 | 150 |
| Ala Tyr Leu Asp Leu Leu Leu Gly Asn | Cys Tyr Leu Met Pro Leu | |
| 155 | 160 | 165 |
| Asn Thr Ser Ile Val Met Pro Pro Lys | Asn Leu Val Glu Leu Phe | |
| 170 | 175 | 180 |
| Gly Lys Leu Ala Ser Gly Arg Tyr Leu | Pro Gln Thr Tyr Val Val | |
| 185 | 190 | 195 |
| Arg Glu Asp Leu Val Ala Val Glu Glu | Ile Arg Asp Val Ser Asn | |
| 200 | 205 | 210 |
| Leu Gly Ile Phe Ile Tyr Gln Leu Cys | Asn Asn Arg Lys Ser Phe | |
| 215 | 220 | 225 |
| Arg Leu Arg Arg Arg Asp Leu Leu Leu | Gly Phe Asn Lys Arg Ala | |
| 230 | 235 | 240 |
| Ile Asp Lys Cys Trp Lys Ile Arg His | Phe Pro Asn Glu Phe Ile | |
| 245 | 250 | 255 |
| Val Glu Thr Lys Ile Cys Gln Glu | | |
| 260 | | |

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 <213> Artificial

 <220>
 <221> Artificial sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 44
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 <210> 45

<211> 20
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<220>
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<210> 46
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
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<223> Synthetic construct.

<400> 46
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<220>
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<400> 47
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<210> 48
<211> 25
<212> DNA
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<220>
<221> Artificial sequence
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<223> Synthetic construct.

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<210> 49
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<212> DNA
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 gatcaggttg aatgaatgga actcttcctg tctggcctcc aaagcagcct 1600
 agaagctgag gggctgtgtt tgaggggacc tccaccctgg ggaagtccga 1650
 ggggctgggg aagggtttct gacgcccagc ctggagcagg ggggccctgg 1700
 ccaccccctg ttgtcacac attgtctggc agcctgtgtc cacaatattc 1750
 gtcagtcctc gacagggagc ctgggctccg tctgtcttta gggaggctct 1800
 ggcaggaggt cctctccccc atccctccat ctggggctcc cccaacctct 1850
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 attccggcct gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1950
 aaaaaaaaaa aaaaaaaga 1969

<210> 50

<211> 283

<212> PRT

<213> Homo sapiens

<400> 50

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Val | Ser | Ala | Ala | Ala | Pro | Ser | Leu | Leu | Ile | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Leu | Gly | Ser | Val | Pro | Ala | Thr | Asp | Ala | Arg | Ser | Val | Pro | Leu | 20 | 25 | 30 | |
| Lys | Ala | Thr | Phe | Leu | Glu | Asp | Val | Ala | Gly | Ser | Gly | Glu | Ala | Glu | 35 | 40 | 45 | |
| Gly | Ser | Ser | Ala | Ser | Ser | Pro | Ser | Leu | Pro | Pro | Pro | Trp | Thr | Pro | 50 | 55 | 60 | |
| Ala | Leu | Ser | Pro | Thr | Ser | Met | Gly | Pro | Gln | Pro | Thr | Thr | Leu | Gly | 65 | 70 | 75 | |
| Gly | Pro | Ser | Pro | Pro | Thr | Asn | Phe | Leu | Asp | Gly | Ile | Val | Asp | Phe | 80 | 85 | 90 | |
| Phe | Arg | Gln | Tyr | Val | Met | Leu | Ile | Ala | Val | Val | Gly | Ser | Leu | Ala | 95 | 100 | 105 | |
| Phe | Leu | Leu | Met | Phe | Ile | Val | Cys | Ala | Ala | Val | Ile | Thr | Arg | Gln | 110 | 115 | 120 | |
| Lys | Gln | Lys | Ala | Ser | Ala | Tyr | Tyr | Pro | Ser | Ser | Phe | Pro | Lys | Lys | 125 | 130 | 135 | |
| Lys | Tyr | Val | Asp | Gln | Ser | Asp | Arg | Ala | Gly | Gly | Pro | Arg | Ala | Phe | 140 | 145 | 150 | |
| Ser | Glu | Val | Pro | Asp | Arg | Ala | Pro | Asp | Ser | Arg | Pro | Glu | Glu | Ala | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Ser | Ser | Arg | Gln | Leu | Gln | Ala | Asp | Ile | Leu | Ala | Ala | Thr | 170 | 175 | 180 |
| Gln | Asn | Leu | Lys | Ser | Pro | Thr | Arg | Ala | Ala | Leu | Gly | Gly | Gly | Asp | 185 | 190 | 195 |
| Gly | Ala | Arg | Met | Val | Glu | Gly | Arg | Gly | Ala | Glu | Glu | Glu | Glu | Lys | 200 | 205 | 210 |
| Gly | Ser | Gln | Glu | Gly | Asp | Gln | Glu | Val | Gln | Gly | His | Gly | Val | Pro | 215 | 220 | 225 |
| Val | Glu | Thr | Pro | Glu | Ala | Gln | Glu | Glu | Pro | Cys | Ser | Gly | Val | Leu | 230 | 235 | 240 |
| Glu | Gly | Ala | Val | Val | Ala | Gly | Glu | Gly | Gln | Gly | Glu | Leu | Glu | Gly | 245 | 250 | 255 |
| Ser | Leu | Leu | Leu | Ala | Gln | Glu | Ala | Gln | Gly | Pro | Val | Gly | Pro | Pro | 260 | 265 | 270 |
| Glu | Ser | Pro | Cys | Ala | Cys | Ser | Ser | Val | His | Pro | Ser | Val | | | 275 | 280 | |

<210> 51
 <211> 1734
 <212> DNA
 <213> Homo sapiens

<400> 51
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 gcacagagac gcagagcaag ggcggcaagg aggagaccct ggtgggagga 150
 agacactctg gagagagagg gggctgggca gagatgaagt tccaggggcc 200
 cctggcctgc ctctgtctgg ccctctgcct gggcagtggg gaggtctggc 250
 ccctgcagag cggagaggaa agcactggga caaatattgg ggaggccctt 300
 ggacatggcc tgggagacgc cctgagcgaa ggggtgggaa aggccattgg 350
 caaagaggcc ggaggggcag ctggctctaa agtcagttag gcccttggcc 400
 aagggaccag agaagcagtt ggcactggag tcaggcaggt tccaggcttt 450
 ggcgcagcag atgcttttgg caacagggtc ggggaagcag cccatgtctt 500
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 acggagcaga tgctgtccgc ggctcctggc agggggtgcc tggccacagt 600
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tccacggata ccccggaac tcagcaggca gctttggaat gaatcctcag 750
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 gcaaccagaa tgaagggtgc acgaatcccc caccatctgg ctgaggtgga 900
 ggctccagca actctggggg aggcagcggc tcacagtcgg gcagcagtg 950
 cagtggcagc aatggtgaca acaacaatgg cagcagcagt ggtggcagca 1000
 gcagtggcag cagcagtggc agcagcagtg gcggcagcag tggcggcagc 1050
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<210> 52
 <211> 440
 <212> PRT
 <213> Homo sapiens

<400> 52
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 Leu Gly Ser Gly Glu Ala Gly Pro Leu Gln Ser Gly Glu Glu Ser
 20 25 30
 Thr Gly Thr Asn Ile Gly Glu Ala Leu Gly His Gly Leu Gly Asp
 35 40 45
 Ala Leu Ser Glu Gly Val Gly Lys Ala Ile Gly Lys Glu Ala Gly

| | | |
|---------------------|---|-------------------------|
| Glu Ser Gly Ile | Gln Gly Phe Arg Gly | Gln Gly Val Ser Ser Asn |
| 350 | 355 | 360 |
| Met Arg Glu Ile | Ser Lys Glu Gly Asn Arg Leu Leu Gly Gly Ser | |
| 365 | 370 | 375 |
| Gly Asp Asn Tyr | Arg Gly Gln Gly Ser Ser Trp Gly Ser Gly Gly | |
| 380 | 385 | 390 |
| Gly Asp Ala Val | Gly Gly Val Asn Thr Val Asn Ser Glu Thr Ser | |
| 395 | 400 | 405 |
| Pro Gly Met Phe | Asn Phe Asp Thr Phe Trp Lys Asn Phe Lys Ser | |
| 410 | 415 | 420 |
| Lys Leu Gly Phe | Ile Asn Trp Asp Ala Ile Asn Lys Asp Gln Arg | |
| 425 | 430 | 435 |
| Ser Ser Arg Ile Pro | | |
| 440 | | |

<210> 53
 <211> 3580
 <212> DNA
 <213> Homo sapiens

<400> 53
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<210> 54
<211> 280
<212> PRT
<213> Homo sapiens

<400> 54

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Cys | Phe | Leu | Asn | Lys | Leu | Leu | Leu | Leu | Ala | Val | Leu | Gly | Trp | 1 | 5 | 10 | 15 |
| Leu | Phe | Gln | Ile | Pro | Thr | Val | Pro | Glu | Asp | Leu | Phe | Phe | Leu | Glu | 20 | 25 | 30 | |
| Glu | Gly | Pro | Ser | Tyr | Ala | Phe | Glu | Val | Asp | Thr | Val | Ala | Pro | Glu | 35 | 40 | 45 | |
| His | Gly | Leu | Asp | Asn | Ala | Pro | Val | Val | Asp | Gln | Gln | Leu | Leu | Tyr | 50 | 55 | 60 | |
| Thr | Cys | Cys | Pro | Tyr | Ile | Gly | Glu | Leu | Arg | Lys | Leu | Leu | Ala | Ser | 65 | 70 | 75 | |
| Trp | Val | Ser | Gly | Ser | Ser | Gly | Arg | Ser | Gly | Gly | Phe | Met | Arg | Lys | 80 | 85 | 90 | |
| Ile | Thr | Pro | Thr | Thr | Thr | Thr | Ser | Leu | Gly | Ala | Gln | Pro | Ser | Gln | 95 | 100 | 105 | |
| Thr | Ser | Gln | Gly | Leu | Gln | Ala | Gln | Leu | Ala | Gln | Ala | Phe | Phe | His | 110 | 115 | 120 | |
| Asn | Gln | Pro | Pro | Ser | Leu | Arg | Arg | Thr | Val | Glu | Phe | Val | Ala | Glu | 125 | 130 | 135 | |
| Arg | Ile | Gly | Ser | Asn | Cys | Val | Lys | His | Ile | Lys | Ala | Thr | Leu | Val | 140 | 145 | 150 | |
| Ala | Asp | Leu | Val | Arg | Gln | Ala | Glu | Ser | Leu | Leu | Gln | Glu | Gln | Leu | 155 | 160 | 165 | |
| Val | Thr | Gln | Gly | Glu | Glu | Gly | Gly | Asp | Pro | Ala | Gln | Leu | Leu | Glu | 170 | 175 | 180 | |
| Ile | Leu | Cys | Ser | Gln | Leu | Cys | Pro | His | Gly | Ala | Gln | Ala | Leu | Ala | 185 | 190 | 195 | |
| Leu | Gly | Arg | Glu | Phe | Cys | Gln | Arg | Lys | Ser | Pro | Gly | Ala | Val | Arg | 200 | 205 | 210 | |
| Ala | Leu | Leu | Pro | Glu | Glu | Thr | Pro | Ala | Ala | Val | Leu | Ser | Ser | Ala | 215 | 220 | 225 | |
| Glu | Asn | Ile | Ala | Val | Gly | Leu | Ala | Thr | Glu | Lys | Ala | Cys | Ala | Trp | 230 | 235 | 240 | |
| Leu | Ser | Ala | Asn | Ile | Thr | Ala | Leu | Ile | Arg | Arg | Glu | Val | Lys | Ala | 245 | 250 | 255 | |
| Ala | Val | Ser | Arg | Thr | Leu | Arg | Ala | Gln | Gly | Pro | Glu | Pro | Ala | Ala | 260 | 265 | 270 | |
| Arg | Gly | Glu | Arg | Arg | Gly | Cys | Ser | Arg | Ala | 275 | 280 | | | | | | | |

<210> 55
<211> 2401
<212> DNA
<213> Homo sapiens

<400> 55

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cgacacctac ccctcagcag acgccggaga gaaatgagta gcaacaaaga 200
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<400> 56

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<212> PRT
 <213> Homo sapiens

<400> 58

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Thr | Leu | Ala | Cys | Leu | Leu | Leu | Ala | Thr | Ala | Gly | Cys | Phe | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Asp | Leu | Asn | Glu | Val | Pro | Gln | Val | Thr | Val | Gln | Pro | Ala | Ser | Thr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Gln | Lys | Pro | Gly | Gly | Thr | Val | Ile | Leu | Gly | Cys | Val | Val | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Pro | Pro | Arg | Met | Asn | Val | Thr | Trp | Arg | Leu | Asn | Gly | Lys | Glu | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Gly | Ser | Asp | Asp | Ala | Leu | Gly | Val | Leu | Ile | Thr | His | Gly | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Ile | Thr | Ala | Leu | Asn | Asn | His | Thr | Val | Gly | Arg | Tyr | Gln | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | Val | Ala | Arg | Met | Pro | Ala | Gly | Ala | Val | Ala | Ser | Val | Pro | Ala | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Val | Thr | Leu | Ala | Asn | Leu | Gln | Asp | Phe | Lys | Leu | Asp | Val | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Val | Ile | Glu | Val | Asp | Glu | Gly | Asn | Thr | Ala | Val | Ile | Ala | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Pro | Glu | Ser | His | Pro | Lys | Ala | Gln | Val | Arg | Tyr | Ser | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Gln | Glu | Trp | Leu | Glu | Ala | Ser | Arg | Gly | Asn | Tyr | Leu | Ile | Met | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Ser | Gly | Asn | Leu | Gln | Ile | Val | Asn | Ala | Ser | Gln | Glu | Asp | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Met | Tyr | Lys | Cys | Ala | Ala | Tyr | Asn | Pro | Val | Thr | Gln | Glu | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Thr | Ser | Gly | Ser | Ser | Asp | Arg | Leu | Arg | Val | Arg | Arg | Ser | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Glu | Ala | Ala | Arg | Ile | Ile | Tyr | Pro | Pro | Glu | Ala | Gln | Thr | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Val | Thr | Lys | Gly | Gln | Ser | Leu | Ile | Leu | Glu | Cys | Val | Ala | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Ile | Pro | Pro | Pro | Arg | Val | Thr | Trp | Ala | Lys | Asp | Gly | Ser | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Gly | Tyr | Asn | Lys | Thr | Arg | Phe | Leu | Leu | Ser | Asn | Leu | Leu | 275 | 280 | 285 |
| Ile | Asp | Thr | Thr | Ser | Glu | Glu | Asp | Ser | Gly | Thr | Tyr | Arg | Cys | Met | 290 | 295 | 300 |
| Ala | Asp | Asn | Gly | Val | Gly | Gln | Pro | Gly | Ala | Ala | Val | Ile | Leu | Tyr | 305 | 310 | 315 |
| Asn | Val | Gln | Val | Phe | Glu | Pro | Pro | Glu | Val | Thr | Met | Glu | Leu | Ser | 320 | 325 | 330 |
| Gln | Leu | Val | Ile | Pro | Trp | Gly | Gln | Ser | Ala | Lys | Leu | Thr | Cys | Glu | 335 | 340 | 345 |
| Val | Arg | Gly | Asn | Pro | Pro | Pro | Ser | Val | Leu | Trp | Leu | Arg | Asn | Ala | 350 | 355 | 360 |
| Val | Pro | Leu | Ile | Ser | Ser | Gln | Arg | Leu | Arg | Leu | Ser | Arg | Arg | Ala | 365 | 370 | 375 |
| Leu | Arg | Val | Leu | Ser | Met | Gly | Pro | Glu | Asp | Glu | Gly | Val | Tyr | Gln | 380 | 385 | 390 |
| Cys | Met | Ala | Glu | Asn | Glu | Val | Gly | Ser | Ala | His | Ala | Val | Val | Gln | 395 | 400 | 405 |
| Leu | Arg | Thr | Ser | Arg | Pro | Ser | Ile | Thr | Pro | Arg | Leu | Trp | Gln | Asp | 410 | 415 | 420 |
| Ala | Glu | Leu | Ala | Thr | Gly | Thr | Pro | Pro | Val | Ser | Pro | Ser | Lys | Leu | 425 | 430 | 435 |
| Gly | Asn | Pro | Glu | Gln | Met | Leu | Arg | Gly | Gln | Pro | Ala | Leu | Pro | Arg | 440 | 445 | 450 |
| Pro | Pro | Thr | Ser | Val | Gly | Pro | Ala | Ser | Pro | Lys | Cys | Pro | Gly | Glu | 455 | 460 | 465 |
| Lys | Gly | Gln | Gly | Ala | Pro | Ala | Glu | Ala | Pro | Ile | Ile | Leu | Ser | Ser | 470 | 475 | 480 |
| Pro | Arg | Thr | Ser | Lys | Thr | Asp | Ser | Tyr | Glu | Leu | Val | Trp | Arg | Pro | 485 | 490 | 495 |
| Arg | His | Glu | Gly | Ser | Gly | Arg | Ala | Pro | Ile | Leu | Tyr | Tyr | Val | Val | 500 | 505 | 510 |
| Lys | His | Arg | Lys | Gln | Val | Thr | Asn | Ser | Ser | Asp | Asp | Trp | Thr | Ile | 515 | 520 | 525 |
| Ser | Gly | Ile | Pro | Ala | Asn | Gln | His | Arg | Leu | Thr | Leu | Thr | Arg | Leu | 530 | 535 | 540 |
| Asp | Pro | Gly | Ser | Leu | Tyr | Glu | Val | Glu | Met | Ala | Ala | Tyr | Asn | Cys | 545 | 550 | 555 |
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<213> Artificial

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| cctgagacag | cgttacaaga | atgtgcttca | ggatgttaac | ctgcgaaaatt | 450 |
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<400> 63

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| Met | Gln | Pro | Thr | Gly | Arg | Glu | Gly | Ser | Arg | Ala | Leu | Ser | Arg | Arg | 1 | 5 | 10 | 15 |
| Tyr | Leu | Arg | Arg | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Arg | 20 | 25 | 30 | |
| Gln | Pro | Val | Thr | Arg | Ala | Glu | Thr | Thr | Pro | Gly | Ala | Pro | Arg | Ala | 35 | 40 | 45 | |
| Leu | Ser | Thr | Leu | Gly | Ser | Pro | Ser | Leu | Phe | Thr | Thr | Pro | Gly | Val | 50 | 55 | 60 | |
| Pro | Ser | Ala | Leu | Thr | Thr | Pro | Gly | Leu | Thr | Thr | Pro | Gly | Thr | Pro | 65 | 70 | 75 | |
| Lys | Thr | Leu | Asp | Leu | Arg | Gly | Arg | Ala | Gln | Ala | Leu | Met | Arg | Ser | 80 | 85 | 90 | |
| Phe | Pro | Leu | Val | Asp | Gly | His | Asn | Asp | Leu | Pro | Gln | Val | Leu | Arg | 95 | 100 | 105 | |
| Gln | Arg | Tyr | Lys | Asn | Val | Leu | Gln | Asp | Val | Asn | Leu | Arg | Asn | Phe | 110 | 115 | 120 | |
| Ser | His | Gly | Gln | Thr | Ser | Leu | Asp | Arg | Leu | Arg | Asp | Gly | Leu | Val | 125 | 130 | 135 | |
| Gly | Ala | Gln | Phe | Trp | Ser | Ala | Ser | Val | Ser | Cys | Gln | Ser | Gln | Asp | 140 | 145 | 150 | |
| Gln | Thr | Ala | Val | Arg | Leu | Ala | Leu | Glu | Gln | Ile | Asp | Leu | Ile | His | 155 | 160 | 165 | |
| Arg | Met | Cys | Ala | Ser | Tyr | Ser | Glu | Leu | Glu | Leu | Val | Thr | Ser | Ala | 170 | 175 | 180 | |
| Glu | Gly | Leu | Asn | Ser | Ser | Gln | Lys | Leu | Ala | Cys | Leu | Ile | Gly | Val | 185 | 190 | 195 | |
| Xaa | Gly | Gly | His | Ser | Leu | Asp | Ser | Ser | Leu | Ser | Val | Leu | Arg | Ser | 200 | 205 | 210 | |
| Phe | Tyr | Val | Leu | Gly | Val | Arg | Tyr | Leu | Thr | Leu | Thr | Phe | Thr | Cys | 215 | 220 | 225 | |
| Ser | Thr | Pro | Trp | Ala | Glu | Ser | Ser | Thr | Lys | Phe | Arg | His | His | Met | 230 | 235 | 240 | |
| Tyr | Thr | Asn | Val | Ser | Gly | Leu | Thr | Ser | Phe | Gly | Glu | Lys | Val | Val | 245 | 250 | 255 | |
| Glu | Glu | Leu | Asn | Arg | Leu | Gly | Met | Met | Ile | Asp | Leu | Ser | Tyr | Ala | | | | |

| | 260 | 265 | 270 |
|-----------------|---------------------|---------------------|-----|
| Ser Asp Thr Leu | Ile Arg Arg Val Leu | Glu Val Ser Gln Ala | Pro |
| | 275 | 280 | 285 |
| Val Ile Phe Ser | His Ser Ala Ala Arg | Ala Val Cys Asp Asn | Leu |
| | 290 | 295 | 300 |
| Leu Asn Val Pro | Asp Asp Ile Leu Gln | Leu Leu Lys Asn Gly | Gly |
| | 305 | 310 | 315 |
| Ile Val Met Val | Thr Leu Ser Met Gly | Val Leu Gln Cys Asn | Leu |
| | 320 | 325 | 330 |
| Leu Ala Asn Val | Ser Thr Val Ala Asp | His Phe Asp His Ile | Arg |
| | 335 | 340 | 345 |
| Ala Val Ile Gly | Ser Glu Phe Ile Gly | Ile Gly Gly Asn Tyr | Asp |
| | 350 | 355 | 360 |
| Gly Thr Gly Arg | Phe Pro Gln Gly Leu | Glu Asp Val Ser Thr | Tyr |
| | 365 | 370 | 375 |
| Pro Val Leu Ile | Glu Glu Leu Leu Ser | Arg Xaa Trp Ser Glu | Glu |
| | 380 | 385 | 390 |
| Glu Leu Gln Gly | Val Leu Arg Gly Asn | Leu Leu Arg Val Phe | Arg |
| | 395 | 400 | 405 |
| Gln Val Glu Lys | Val Arg Glu Glu Ser | Arg Ala Gln Ser Pro | Val |
| | 410 | 415 | 420 |
| Glu Ala Glu Phe | Pro Tyr Gly Gln Leu | Ser Thr Ser Cys His | Ser |
| | 425 | 430 | 435 |
| His Leu Val Pro | Gln Asn Gly His Gln | Ala Thr His Leu Glu | Val |
| | 440 | 445 | 450 |
| Thr Lys Gln Pro | Thr Asn Arg Val Pro | Trp Arg Ser Ser Asn | Ala |
| | 455 | 460 | 465 |
| Ser Pro Tyr Leu | Val Pro Gly Leu Val | Ala Ala Ala Thr Ile | Pro |
| | 470 | 475 | 480 |
| Thr Phe Thr Gln | Trp Leu Cys | | |
| | 485 | | |

<210> 64

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-25

<223> Synthetic construct.

<400> 64

ccttcacctg cagtacacca tgggc 25

<210> 65

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-25

<223> Synthetic construct.

<400> 65

gtcacacaca gctctggcag ctgag 25

<210> 66

<211> 47

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-47

<223> Synthetic construct.

<400> 66

ccaagttcag acaccacatg tacaccaacg tcagcggatt gacaagc 47

<210> 67

<211> 1564

<212> DNA

<213> Homo sapiens

<400> 67

tgctaggctc tgtcccacaa tgcacccgag agcaggagct gaaagcctct 50

aacaccacaca gatccctcta tgactgcaat gtgaggtgtc cggctttgct 100

ggcccagcaa gcctgataag catgaagctc ttatctttgg tggctgtggt 150

cgggtgtttg ctggtgcccc cagctgaagc caacaagagt tctgaagata 200

tccggtgcaa atgcatctgt ccaccttata gaaacatcag tgggcacatt 250

tacaaccaga atgtatccca gaaggactgc aactgcctgc acgtggtgga 300

gcccattgcca gtgcctggcc atgacgtgga ggcctactgc ctgctgtgcg 350

agtgcaggta cgaggagcgc agcaccacca ccatcaaggt catcattgtc 400

atctacctgt ccgtggtggg tgcoctgttg ctctacatgg ccttcctgat 450

gctggtggac cctctgatcc gaaagccgga tgcatacact gagcaactgc 500

acaatgagga ggagaatgag gatgctcgct ctatggcagc agctgctgca 550

tccctcgggg gaccccgagc aaacacagtc ctggagcgtg tggaaggtgc 600

ccagcagcgg tggaagctgc aggtgcagga gcagcgggaag acagtcttcg 650
 atcggcacaa gatgctcagc tagatgggct ggtgtggttg ggtcaaggcc 700
 ccaacaccat ggctgccagc ttccaggctg gacaaagcag ggggctactt 750
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 ctctttctcc ctaactttag aaatgttgta cttggctatt ttgattaggg 850
 aagagggatg tgggtctctga tctctgttgt cttcttgggt ctttgggggt 900
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 ctcaggagtg gatgcgatct gtctctcctg gctccactct tgccgccttc 1000
 cagctctgag tcttgggaat gttgttacc cttggaagata aagctgggtc 1050
 ttcaggaact cagtgtctgg gaggaaagca tggcccagca ttcagcatgt 1100
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 gactcgaggc tgagcgtgga tctgaacacc acagcccctg tacttgggtt 1450
 gcctcttgtc cctgaacttc gttgtaccag tgcattggaga gaaaattttg 1500
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 ttttatttct ctca 1564

<210> 68
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 68
 Met Lys Leu Leu Ser Leu Val Ala Val Val Gly Cys Leu Leu Val
 1 5 10 15
 Pro Pro Ala Glu Ala Asn Lys Ser Ser Glu Asp Ile Arg Cys Lys
 20 25 30
 Cys Ile Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn
 35 40 45
 Gln Asn Val Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu
 50 55 60

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Met | Pro | Val | Pro | Gly | His | Asp | Val | Glu | Ala | Tyr | Cys | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Glu | Cys | Arg | Tyr | Glu | Glu | Arg | Ser | Thr | Thr | Thr | Ile | Lys | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Ile | Val | Ile | Tyr | Leu | Ser | Val | Val | Gly | Ala | Leu | Leu | Leu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Met | Ala | Phe | Leu | Met | Leu | Val | Asp | Pro | Leu | Ile | Arg | Lys | Pro | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ala | Tyr | Thr | Glu | Gln | Leu | His | Asn | Glu | Glu | Glu | Asn | Glu | Asp | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Ser | Met | Ala | Ala | Ala | Ala | Ala | Ser | Leu | Gly | Gly | Pro | Arg | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asn | Thr | Val | Leu | Glu | Arg | Val | Glu | Gly | Ala | Gln | Gln | Arg | Trp | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gln | Val | Gln | Glu | Gln | Arg | Lys | Thr | Val | Phe | Asp | Arg | His | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Met | Leu | Ser | | | | | | | | | | | | |

<210> 69
 <211> 3170
 <212> DNA
 <213> Homo sapiens

<400> 69
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 agttcatagg gtcctgggtc cccgaaccag gaagggttga gggaacacaa 100
 tctgcaagcc cccgcgaccc aagtgagggg ccccggtgtg gggtcctccc 150
 tccctttgca ttcccacccc tccgggtttt gcgcttctct ggggaccccc 200
 tcgccgggag atggccgcgt tgatgcggag caaggattcg tcctgctgcc 250
 tgctcctact ggccgcggtg ctgatgggtg agagctcaca gatcggcagt 300
 tcgcgggcca aactcaactc catcaagtcc tctctgggcg gggagacgcc 350
 tggtcaggcc gccaatcgat ctgcgggcat gtaccaagga ctggcattcg 400
 gcggcagtaa gaagggcaaa aacctggggc aggcctaccc ttgttagcagt 450
 gataaggagt gtgaagttgg gaggtattgc cacagtcccc accaaggatc 500
 atcggcctgc atggtgtgtc ggagaaaaaa gaagcgctgc caccgagatg 550
 gcatgtgctg cccagttacc cgctgcaata atggcatctg tatcccagtt 600
 actgaaagca tcttaacccc tcacatcccg gctctggatg gtactcggca 650

cagagatcga aaccacggtc attactcaaa ccatgacttg ggatggcaga 700
atctaggaag accacacact aagatgtcac atataaaaagg gcatgaagga 750
gacccotgcc tacgatcatc agactgcatt gaagggtttt gctgtgctcg 800
tcattttctgg accaaaatct gcaaaccagt gctccatcag ggggaagtct 850
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tgcgactgtg cgaagggcct gtcttgcaaa gtatggaaag atgccaccta 950
ctcctccaaa gccagactcc atgtgtgtca gaaaatttga tcaccattga 1000
ggaacatcat caattgcaga ctgtgaagtt gtgtatttaa tgcattatag 1050
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gtgataagaa tatagatgat cacaaaaagg gagaaagaaa acatgaactg 1150
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aagagtttag gttgtgctgg aggagaggtt tccttcagat tgctgattgc 1350
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aaaatactcc tagaataaact tgttatacaa taggttctaa aaataaaaatt 1450
gctaaacaag aaatgaaaac atggagcatt gttaatttac aacagaaaat 1500
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ttcacagatg gcaaaaaaat ttaaagatgt ccaatatatg tgggaaaaga 1900
gctaacagag agatcattat ttcttaaaga ttggccataa cctatatttt 1950
gatagaatta gattggtaaa tacatgtatt catacact ctgtggtaat 2000
agagacttaa gctggatctg tactgcactg gagtaagcaa gaaaattggg 2050
aaaacttttt cgtttggtca ggttttggca acacatagat catatgtctg 2100

aggcacaagt tggctgttca tctttgaaac caggggatgc acagtctaaa 2150
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tcagtgtgag gtcctgtgtc cgtactatcc tcaaattatt tattttatag 2250
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ttatagtcgt gacttttaac tttttagtag cacaattcac tttttagttt 2650
tcttttactt aaatcccac tgcagttcca aattttaagt ctcccagtag 2700
agattgagtt tgagcctgta tatctattaa aaatttcaac ttcccacata 2750
tatttactaa gatgattaag acttacattt tctgcacagg tctgcaaaaa 2800
caaaaattat aaactagtcc atccaagaac caaagtttgt ataaacaggt 2850
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atataacaat tatttatattt acaatttggg ttctgcaata tttttcttat 2950
gtccaccctt ttaaaaatta ttatttgaag taatttatat acaggaaatg 3000
ttaatgagat gtattttctt atagagatat ttcttacaga aagctttgta 3050
gcagaatata tttgcagcta ttgactttgt aatttaggaa aaatgtataa 3100
taagataaaa tctattaaat ttttctcctc taaaaactga aaaaaaaaaa 3150
aaaaaaaaa aaaaaaaaaa 3170

<210> 70

<211> 259

<212> PRT

<213> Homo sapiens

<400> 70

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Leu | Met | Arg | Ser | Lys | Asp | Ser | Ser | Cys | Cys | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | | | | | | | | | | | | | | |
| Leu | Leu | Ala | Ala | Val | Leu | Met | Val | Glu | Ser | Ser | Gln | Ile | Gly | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| | | | | | | | | | | | | | | |
| Ser | Arg | Ala | Lys | Leu | Asn | Ser | Ile | Lys | Ser | Ser | Leu | Gly | Gly | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

Thr Pro Gly Gln Ala Ala Asn Arg Ser Ala Gly Met Tyr Gln Gly
 50 55 60
 Leu Ala Phe Gly Gly Ser Lys Lys Gly Lys Asn Leu Gly Gln Ala
 65 70 75
 Tyr Pro Cys Ser Ser Asp Lys Glu Cys Glu Val Gly Arg Tyr Cys
 80 85 90
 His Ser Pro His Gln Gly Ser Ser Ala Cys Met Val Cys Arg Arg
 95 100 105
 Lys Lys Lys Arg Cys His Arg Asp Gly Met Cys Cys Pro Ser Thr
 110 115 120
 Arg Cys Asn Asn Gly Ile Cys Ile Pro Val Thr Glu Ser Ile Leu
 125 130 135
 Thr Pro His Ile Pro Ala Leu Asp Gly Thr Arg His Arg Asp Arg
 140 145 150
 Asn His Gly His Tyr Ser Asn His Asp Leu Gly Trp Gln Asn Leu
 155 160 165
 Gly Arg Pro His Thr Lys Met Ser His Ile Lys Gly His Glu Gly
 170 175 180
 Asp Pro Cys Leu Arg Ser Ser Asp Cys Ile Glu Gly Phe Cys Cys
 185 190 195
 Ala Arg His Phe Trp Thr Lys Ile Cys Lys Pro Val Leu His Gln
 200 205 210
 Gly Glu Val Cys Thr Lys Gln Arg Lys Lys Gly Ser His Gly Leu
 215 220 225
 Glu Ile Phe Gln Arg Cys Asp Cys Ala Lys Gly Leu Ser Cys Lys
 230 235 240
 Val Trp Lys Asp Ala Thr Tyr Ser Ser Lys Ala Arg Leu His Val
 245 250 255
 Cys Gln Lys Ile

<210> 71
 <211> 1809
 <212> DNA
 <213> Homo sapiens

<400> 71
 tctcaatctg ctgacctcgt gatccgcctg accttgtaat ccacctacct 50
 tggcctccca aagtgttggg attacaggcg tgagccaccg cgcccggcca 100
 acatcacgtt tttaaaaatt gattttcttca aattcatggc aaatatttcc 150
 cttcccttta acttcttatg tcagaatgag gaaggatagc tgcatttatt 200

tagtcagttt tcattgcata gtaatatatt catgtagtat tttctaagtt 250
atatttttagt aattcatatg ttttagatta taggttttaa catacttgtg 300
aaaataacttg atgtgtttta aagccttggg cagaaattct gtattgttga 350
ggatttgttc ttttatcccc cttttaaaagt catccgtcct tggctcagga 400
tttggagagc ttgcaccacc aaaaatggca aacatcacca gctcccagat 450
tttggaccag ttgaaagctc cgagtttggg ccagtttacc accaccccaa 500
gtacacagca gaatagtaca agtcacccta caactactac ttcttgggac 550
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ccttcccagg caaaacttcg agaatcaaca cctggagaca gtccctccac 750
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tgtctgtcca ccagccacag cccaaacaca tcaaacttgc taagcggcgg 850
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tacatcttta tcaatgaoca gtgcagtaca gaactccaca tatacaactt 1100
ccgtcattac ctccctgcagt ctgacaagct catcactgaa ttctgctagt 1150
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aaaaagcagc ctttttgcct ttttgttttt ggaccagggtg ttggctgtgg 1450
tgttattaga aatgtcttaa ccacagcaag aaggagggtg tggctcata 1500
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tttaaagatg cttgggccag gcgggggtggc tgatgcccat aatcccagtg 1600
ctttgggggg ccaaggcagg cagattgccc aagctcagga gtttgagacc 1650

accctgggca acatggtgaa actctgtctc tactaaaata cgaaaaacta 1700
 gccgggtgtg gtggcggcgc gtgcctgtaa tcccagctac ttgggaggct 1750
 gaggcacaag aatcgcttga gccagcttgg gctacaaagt gagactccgt 1800
 ctgaaaaga 1809

<210> 72
 <211> 363
 <212> PRT
 <213> Homo sapiens

<400> 72
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 Cys Ser Phe Ile Pro Leu Leu Lys Ser Ser Val Leu Gly Ser Gly
 20 25 30
 Phe Gly Glu Leu Ala Pro Pro Lys Met Ala Asn Ile Thr Ser Ser
 35 40 45
 Gln Ile Leu Asp Gln Leu Lys Ala Pro Ser Leu Gly Gln Phe Thr
 50 55 60
 Thr Thr Pro Ser Thr Gln Gln Asn Ser Thr Ser His Pro Thr Thr
 65 70 75
 Thr Thr Ser Trp Asp Leu Lys Pro Pro Thr Ser Gln Ser Ser Val
 80 85 90
 Leu Ser His Leu Asp Phe Lys Ser Gln Pro Glu Pro Ser Pro Val
 95 100 105
 Leu Ser Gln Leu Ser Gln Arg Gln Gln His Gln Ser Gln Ala Val
 110 115 120
 Thr Val Pro Pro Pro Gly Leu Glu Ser Phe Pro Ser Gln Ala Lys
 125 130 135
 Leu Arg Glu Ser Thr Pro Gly Asp Ser Pro Ser Thr Val Asn Lys
 140 145 150
 Leu Leu Gln Leu Pro Ser Thr Thr Ile Glu Asn Ile Ser Val Ser
 155 160 165
 Val His Gln Pro Gln Pro Lys His Ile Lys Leu Ala Lys Arg Arg
 170 175 180
 Ile Pro Pro Ala Ser Lys Ile Pro Ala Ser Ala Val Glu Met Pro
 185 190 195
 Gly Ser Ala Asp Val Thr Gly Leu Asn Val Gln Phe Gly Ala Leu
 200 205 210
 Glu Phe Gly Ser Glu Pro Ser Leu Ser Glu Phe Gly Ser Ala Pro
 215 220 225

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ser Ser Glu Asn | Ser Asn Gln Ile Pro | Ile Ser Leu Tyr Ser | Lys |
| 230 | 235 | | 240 |
| Ser Leu Ser Glu | Pro Leu Asn Thr Ser | Leu Ser Met Thr Ser | Ala |
| 245 | 250 | | 255 |
| Val Gln Asn Ser | Thr Tyr Thr Thr Ser | Val Ile Thr Ser Cys | Ser |
| 260 | 265 | | 270 |
| Leu Thr Ser Ser | Ser Leu Asn Ser Ala | Ser Pro Val Ala Met | Ser |
| 275 | 280 | | 285 |
| Ser Ser Tyr Asp | Gln Ser Ser Val His | Asn Arg Ile Pro Tyr | Gln |
| 290 | 295 | | 300 |
| Ser Pro Val Ser | Ser Ser Glu Ser Ala | Pro Gly Thr Ile Met | Asn |
| 305 | 310 | | 315 |
| Gly His Gly Gly | Gly Arg Ser Gln Gln | Thr Leu Asp Ser Lys | Tyr |
| 320 | 325 | | 330 |
| Ser Ser Lys Leu | Leu Leu Ser Trp Leu | Val Pro Thr Lys Gln | Arg |
| 335 | 340 | | 345 |
| Lys Arg Ile Ala | His Val Met Trp Lys | Thr Pro Val Gly Gln | Trp |
| 350 | 355 | | 360 |
| Leu Ile Arg | | | |

<210> 73
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 73
 aattcatggc aaatatttcc cttccc 26

<210> 74
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 74
 tggtaaaactg gcccaaactc gg 22

<210> 75
 <211> 50

<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-50
<223> Synthetic construct

<400> 75
ttaaagtcacat ccgtccttgg ctcaggattt ggagagcttg caccaccaa 50

<210> 76
<211> 1989
<212> DNA
<213> Homo sapiens

<400> 76
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tgactcagc ggtggaggag acggacgcg ggctgtacac ctgcaacctg 150
caccatcact actgccacct ctacgagagc ctggccgtcc gcctggagg 200
caccgacgac cccccggcca cccccgccta ctgggacggc gagaaggagg 250
tgctggcggt ggcgcgcggc gcaccgcgc ttctgacctg cgtgaaccgc 300
gggcacgtgt ggaccgaccg gcacgtggag gaggtcaac aggtggtgca 350
ctgggaccgg cagccgcccg gggccccgca cgaccgcgc gaccgcctgc 400
tggacctcta cgcgtcgggc gagcgccgc cctacgggcc ctttttctg 450
cgcgaccgcg tggctgtggg cgcggatgcc tttagcgcg gtgacttctc 500
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cggctccagc cacagcgcg cccagggcc agacccaca ctggcgcgcg 700
gccacaacgt catcaatgtc atcgtcccgc agagccgagc ccacttcttc 750
cagcagctgg gctacgtgct ggccaagctg ctgctcttca tctgtact 800
ggtcactgtc ctctggccg cccgcaggcg ccgcggaggc tacgaatact 850
cggaccagaa gtcgggaaag tcaaagggga aggatgttaa cttggcgag 900
ttcgctgtgg ctgcagggga ccagatgctt tacaggagtg aggacatcca 950
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gccccctgcc tgccaagtac atcgacctag acaaaggggt ccggaaggag 1050

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<210> 77

<211> 341

<212> PRT

<213> Homo sapiens

<400> 77

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Pro | Ser | Arg | Ile | Leu | Leu | Trp | Lys | Leu | Val | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Ser | Ser | Ala | Val | Leu | Leu | His | Ser | Ala | Val | Glu | Glu | Thr | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Gly | Leu | Tyr | Thr | Cys | Asn | Leu | His | His | His | Tyr | Cys | His | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Glu | Ser | Leu | Ala | Val | Arg | Leu | Glu | Val | Thr | Asp | Gly | Pro | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Thr | Pro | Ala | Tyr | Trp | Asp | Gly | Glu | Lys | Glu | Val | Leu | Ala | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

Ala Arg Gly Ala Pro Ala Leu Leu Thr Cys Val Asn Arg Gly His
 80 85 90
 Val Trp Thr Asp Arg His Val Glu Glu Ala Gln Gln Val Val His
 95 100 105
 Trp Asp Arg Gln Pro Pro Gly Val Pro His Asp Arg Ala Asp Arg
 110 115 120
 Leu Leu Asp Leu Tyr Ala Ser Gly Glu Arg Arg Ala Tyr Gly Pro
 125 130 135
 Leu Phe Leu Arg Asp Arg Val Ala Val Gly Ala Asp Ala Phe Glu
 140 145 150
 Arg Gly Asp Phe Ser Leu Arg Ile Glu Pro Leu Glu Val Ala Asp
 155 160 165
 Glu Gly Thr Tyr Ser Cys His Leu His His His Tyr Cys Gly Leu
 170 175 180
 His Glu Arg Arg Val Phe His Leu Thr Val Ala Glu Pro His Ala
 185 190 195
 Glu Pro Pro Pro Arg Gly Ser Pro Gly Asn Gly Ser Ser His Ser
 200 205 210
 Gly Ala Pro Gly Pro Asp Pro Thr Leu Ala Arg Gly His Asn Val
 215 220 225
 Ile Asn Val Ile Val Pro Glu Ser Arg Ala His Phe Phe Gln Gln
 230 235 240
 Leu Gly Tyr Val Leu Ala Thr Leu Leu Leu Phe Ile Leu Leu Leu
 245 250 255
 Val Thr Val Leu Leu Ala Ala Arg Arg Arg Arg Gly Gly Tyr Glu
 260 265 270
 Tyr Ser Asp Gln Lys Ser Gly Lys Ser Lys Gly Lys Asp Val Asn
 275 280 285
 Leu Ala Glu Phe Ala Val Ala Ala Gly Asp Gln Met Leu Tyr Arg
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 Ser Glu Asp Ile Gln Leu Asp Tyr Lys Asn Asn Ile Leu Lys Glu
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 Leu Asp Lys Gly Phe Arg Lys Glu Asn Cys Lys
 335 340

<210> 78
 <211> 2243
 <212> DNA
 <213> Homo sapiens

<400> 78

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<210> 79

<211> 475

<212> PRT

<213> Homo sapiens

<400> 79

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Val | Ser | Glu | Asp | Asp | Phe | Gln | His | Ser | Ser | Asn | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Tyr | Gly | Thr | Thr | Ser | Ser | Ser | Leu | Arg | Ala | Asp | Gln | Glu | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Glu | Lys | Leu | Leu | Asp | Arg | Pro | Pro | Pro | Gly | Leu | Gln | Arg |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Asp | Arg | Phe | Cys | Gly | Thr | Tyr | Ile | Ile | Phe | Phe | Ser | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Gly | Ser | Leu | Leu | Pro | Trp | Asn | Phe | Phe | Ile | Thr | Ala | Lys |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Tyr | Trp | Met | Phe | Lys | Leu | Arg | Asn | Ser | Ser | Ser | Pro | Ala | Thr |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Asp | Pro | Glu | Gly | Ser | Asp | Ile | Leu | Asn | Tyr | Phe | Glu | Ser |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Ala | Val | Ala | Ser | Thr | Val | Pro | Ser | Met | Leu | Cys | Leu | Val | 110 | 115 | 120 |
| Ala | Asn | Phe | Leu | Leu | Val | Asn | Arg | Val | Ala | Val | His | Ile | Arg | Val | 125 | 130 | 135 |
| Leu | Ala | Ser | Leu | Thr | Val | Ile | Leu | Ala | Ile | Phe | Met | Val | Ile | Thr | 140 | 145 | 150 |
| Ala | Leu | Val | Lys | Val | Asp | Thr | Ser | Ser | Trp | Thr | Arg | Gly | Phe | Phe | 155 | 160 | 165 |
| Ala | Val | Thr | Ile | Val | Cys | Met | Val | Ile | Leu | Ser | Gly | Ala | Ser | Thr | 170 | 175 | 180 |
| Val | Phe | Ser | Ser | Ser | Ile | Tyr | Gly | Met | Thr | Gly | Ser | Phe | Pro | Met | 185 | 190 | 195 |
| Arg | Asn | Ser | Gln | Ala | Leu | Ile | Ser | Gly | Gly | Ala | Met | Gly | Gly | Thr | 200 | 205 | 210 |
| Val | Ser | Ala | Val | Ala | Ser | Leu | Val | Asp | Leu | Ala | Ala | Ser | Ser | Asp | 215 | 220 | 225 |
| Val | Arg | Asn | Ser | Ala | Leu | Ala | Phe | Phe | Leu | Thr | Ala | Thr | Ile | Phe | 230 | 235 | 240 |
| Leu | Val | Leu | Cys | Met | Gly | Leu | Tyr | Leu | Leu | Leu | Ser | Arg | Leu | Glu | 245 | 250 | 255 |
| Tyr | Ala | Arg | Tyr | Tyr | Met | Arg | Pro | Val | Leu | Ala | Ala | His | Val | Phe | 260 | 265 | 270 |
| Ser | Gly | Glu | Glu | Glu | Leu | Pro | Gln | Asp | Ser | Leu | Ser | Ala | Pro | Ser | 275 | 280 | 285 |
| Val | Ala | Ser | Arg | Phe | Ile | Asp | Ser | His | Thr | Pro | Pro | Leu | Arg | Pro | 290 | 295 | 300 |
| Ile | Leu | Lys | Lys | Thr | Ala | Ser | Leu | Gly | Phe | Cys | Val | Thr | Tyr | Val | 305 | 310 | 315 |
| Phe | Phe | Ile | Thr | Ser | Leu | Ile | Tyr | Pro | Ala | Val | Cys | Thr | Asn | Ile | 320 | 325 | 330 |
| Glu | Ser | Leu | Asn | Lys | Gly | Ser | Gly | Ser | Leu | Trp | Thr | Thr | Lys | Phe | 335 | 340 | 345 |
| Phe | Ile | Pro | Leu | Thr | Thr | Phe | Leu | Leu | Tyr | Asn | Phe | Ala | Asp | Leu | 350 | 355 | 360 |
| Cys | Gly | Arg | Gln | Leu | Thr | Ala | Trp | Ile | Gln | Val | Pro | Gly | Pro | Asn | 365 | 370 | 375 |
| Ser | Lys | Ala | Leu | Pro | Gly | Phe | Val | Leu | Leu | Arg | Thr | Cys | Leu | Ile | 380 | 385 | 390 |
| Pro | Leu | Phe | Val | Leu | Cys | Asn | Tyr | Gln | Pro | Arg | Val | His | Leu | Lys | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 395 | | 400 | | 405 |
| Thr Val Val Phe | Gln Ser Asp Val Tyr | Pro Ala Leu Leu Ser | Ser | | |
| | 410 | 415 | 420 | | |
| Leu Leu Gly Leu | Ser Asn Gly Tyr Leu | Ser Thr Leu Ala Leu | Leu | | |
| | 425 | 430 | 435 | | |
| Tyr Gly Pro Lys | Ile Val Pro Arg Glu | Leu Ala Glu Ala Thr | Gly | | |
| | 440 | 445 | 450 | | |
| Val Val Met Ser | Phe Tyr Val Cys Leu | Gly Leu Thr Leu Gly | Ser | | |
| | 455 | 460 | 465 | | |
| Ala Cys Ser Thr | Leu Leu Val His Leu | Ile | | | |
| | 470 | 475 | | | |

<210> 80
 <211> 22
 <212> DNA
 <213> Artificial

<220>
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 <222> 1-22
 <223> Synthetic construct.

<400> 80
 ttttgcggtc accattgtct gc 22

<210> 81
 <211> 23
 <212> DNA
 <213> Homo sapiens

<220>
 <221> Artificial sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 81
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<210> 82
 <211> 49
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-49
 <223> Synthetic construct.

<400> 82
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<210> 83
 <211> 1844

<212> DNA
<213> Homo sapiens

<400> 83

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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1844

<210> 84

<211> 567

<212> PRT

<213> Homo sapiens

<400> 84

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Pro | Leu | Ala | Leu | His | Leu | Leu | Val | Leu | Val | Pro | Ile | Leu | 1 | 5 | 10 | 15 |
| Leu | Ser | Leu | Val | Ala | Ser | Gln | Asp | Trp | Lys | Ala | Glu | Arg | Ser | Gln | 20 | 25 | 30 | |
| Asp | Pro | Phe | Glu | Lys | Cys | Met | Gln | Asp | Pro | Asp | Tyr | Glu | Gln | Leu | 35 | 40 | 45 | |
| Leu | Lys | Val | Val | Thr | Trp | Gly | Leu | Asn | Arg | Thr | Leu | Lys | Pro | Gln | 50 | 55 | 60 | |
| Arg | Val | Ile | Val | Val | Gly | Ala | Gly | Val | Ala | Gly | Leu | Val | Ala | Ala | 65 | 70 | 75 | |
| Lys | Val | Leu | Ser | Asp | Ala | Gly | His | Lys | Val | Thr | Ile | Leu | Glu | Ala | 80 | 85 | 90 | |
| Asp | Asn | Arg | Ile | Gly | Gly | Arg | Ile | Phe | Thr | Tyr | Arg | Asp | Gln | Asn | 95 | 100 | 105 | |
| Thr | Gly | Trp | Ile | Gly | Glu | Leu | Gly | Ala | Met | Arg | Met | Pro | Ser | Ser | 110 | 115 | 120 | |
| His | Arg | Ile | Leu | His | Lys | Leu | Cys | Gln | Gly | Leu | Gly | Leu | Asn | Leu | 125 | 130 | 135 | |
| Thr | Lys | Phe | Thr | Gln | Tyr | Asp | Lys | Asn | Thr | Trp | Thr | Glu | Val | His | 140 | 145 | 150 | |
| Glu | Val | Lys | Leu | Arg | Asn | Tyr | Val | Val | Glu | Lys | Val | Pro | Glu | Lys | 155 | 160 | 165 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Leu Gly Tyr Ala | Leu Arg Pro Gln Glu | Lys Gly His Ser Pro | Glu |
| 170 | 175 | 180 | |
| Asp Ile Tyr Gln | Met Ala Leu Asn Gln | Ala Leu Lys Asp Leu | Lys |
| 185 | 190 | 195 | |
| Ala Leu Gly Cys | Arg Lys Ala Met Lys | Lys Phe Glu Arg His | Thr |
| 200 | 205 | 210 | |
| Leu Leu Glu Tyr | Leu Leu Gly Glu Gly | Asn Leu Ser Arg Pro | Ala |
| 215 | 220 | 225 | |
| Val Gln Leu Leu | Gly Asp Val Met Ser | Glu Asp Gly Phe Phe | Tyr |
| 230 | 235 | 240 | |
| Leu Ser Phe Ala | Glu Ala Leu Arg Ala | His Ser Cys Leu Ser | Asp |
| 245 | 250 | 255 | |
| Arg Leu Gln Tyr | Ser Arg Ile Val Gly | Gly Trp Asp Leu Leu | Pro |
| 260 | 265 | 270 | |
| Arg Ala Leu Leu | Ser Ser Leu Ser Gly | Leu Val Leu Leu Asn | Ala |
| 275 | 280 | 285 | |
| Pro Val Val Ala | Met Thr Gln Gly Pro | His Asp Val His Val | Gln |
| 290 | 295 | 300 | |
| Ile Glu Thr Ser | Pro Pro Ala Arg Asn | Leu Lys Val Leu Lys | Ala |
| 305 | 310 | 315 | |
| Asp Val Val Leu | Leu Thr Ala Ser Gly | Pro Ala Val Lys Arg | Ile |
| 320 | 325 | 330 | |
| Thr Phe Ser Pro | Pro Leu Pro Arg His | Met Gln Glu Ala Leu | Arg |
| 335 | 340 | 345 | |
| Arg Leu His Tyr | Val Pro Ala Thr Lys | Val Phe Leu Ser Phe | Arg |
| 350 | 355 | 360 | |
| Arg Pro Phe Trp | Arg Glu Glu His Ile | Glu Gly Gly His Ser | Asn |
| 365 | 370 | 375 | |
| Thr Asp Arg Pro | Ser Arg Met Ile Phe | Tyr Pro Pro Pro Arg | Glu |
| 380 | 385 | 390 | |
| Gly Ala Leu Leu | Leu Ala Ser Tyr Thr | Trp Ser Asp Ala Ala | Ala |
| 395 | 400 | 405 | |
| Ala Phe Ala Gly | Leu Ser Arg Glu Glu | Ala Leu Arg Leu Ala | Leu |
| 410 | 415 | 420 | |
| Asp Asp Val Ala | Ala Leu His Gly Pro | Val Val Arg Gln Leu | Trp |
| 425 | 430 | 435 | |
| Asp Gly Thr Gly | Val Val Lys Arg Trp | Ala Glu Asp Gln His | Ser |
| 440 | 445 | 450 | |
| Gln Gly Gly Phe | Val Val Gln Pro Pro | Ala Leu Trp Gln Thr | Glu |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 455 | | 460 | | 465 |
| Lys Asp Asp Trp Thr Val Pro Tyr Gly Arg Ile Tyr Phe Ala Gly | | | | | |
| | 470 | | 475 | | 480 |
| Glu His Thr Ala Tyr Pro His Gly Trp Val Glu Thr Ala Val Lys | | | | | |
| | 485 | | 490 | | 495 |
| Ser Ala Leu Arg Ala Ala Ile Lys Ile Asn Ser Arg Lys Gly Pro | | | | | |
| | 500 | | 505 | | 510 |
| Ala Ser Asp Thr Ala Ser Pro Glu Gly His Ala Ser Asp Met Glu | | | | | |
| | 515 | | 520 | | 525 |
| Gly Gln Gly His Val His Gly Val Ala Ser Ser Pro Ser His Asp | | | | | |
| | 530 | | 535 | | 540 |
| Leu Ala Lys Glu Glu Gly Ser His Pro Pro Val Gln Gly Gln Leu | | | | | |
| | 545 | | 550 | | 555 |
| Ser Leu Gln Asn Thr Thr His Thr Arg Thr Ser His | | | | | |
| | 560 | | 565 | | |

<210> 85
 <211> 3316
 <212> DNA
 <213> Homo sapiens

<400> 85
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 cctgacattt ggagctgcc ttttctgtg gctgatcacc agacctcaac 350
 ccgtcttacc tcttcttgac ctgaacaatc agtctgtggg aattgaggga 400
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 tgtctgacaa tgggccctgc ttgggatata gaaaaccaa ccagccctac 550
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 <213> Homo sapiens

<400> 86
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 Gly Lys Lys Asp Arg Asp Ser Cys Gly Arg Lys Asn Ser Glu Pro
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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Pro | His | Ser | Leu | Glu | Ala | Leu | Arg | Asp | Ala | Ala | Pro | Ser | 35 | 40 | 45 |
| Gln | Gly | Leu | Asn | Phe | Leu | Leu | Leu | Phe | Thr | Lys | Met | Leu | Phe | Ile | 50 | 55 | 60 |
| Phe | Asn | Phe | Leu | Phe | Ser | Pro | Leu | Pro | Thr | Pro | Ala | Leu | Ile | Cys | 65 | 70 | 75 |
| Ile | Leu | Thr | Phe | Gly | Ala | Ala | Ile | Phe | Leu | Trp | Leu | Ile | Thr | Arg | 80 | 85 | 90 |
| Pro | Gln | Pro | Val | Leu | Pro | Leu | Leu | Asp | Leu | Asn | Asn | Gln | Ser | Val | 95 | 100 | 105 |
| Gly | Ile | Glu | Gly | Gly | Ala | Arg | Lys | Gly | Val | Ser | Gln | Lys | Asn | Asn | 110 | 115 | 120 |
| Asp | Leu | Thr | Ser | Cys | Cys | Phe | Ser | Asp | Ala | Lys | Thr | Met | Tyr | Glu | 125 | 130 | 135 |
| Val | Phe | Gln | Arg | Gly | Leu | Ala | Val | Ser | Asp | Asn | Gly | Pro | Cys | Leu | 140 | 145 | 150 |
| Gly | Tyr | Arg | Lys | Pro | Asn | Gln | Pro | Tyr | Arg | Trp | Leu | Ser | Tyr | Lys | 155 | 160 | 165 |
| Gln | Val | Ser | Asp | Arg | Ala | Glu | Tyr | Leu | Gly | Ser | Cys | Leu | Leu | His | 170 | 175 | 180 |
| Lys | Gly | Tyr | Lys | Ser | Ser | Pro | Asp | Gln | Phe | Val | Gly | Ile | Phe | Ala | 185 | 190 | 195 |
| Gln | Asn | Arg | Pro | Glu | Trp | Ile | Ile | Ser | Glu | Leu | Ala | Cys | Tyr | Thr | 200 | 205 | 210 |
| Tyr | Ser | Met | Val | Ala | Val | Pro | Leu | Tyr | Asp | Thr | Leu | Gly | Pro | Glu | 215 | 220 | 225 |
| Ala | Ile | Val | His | Ile | Val | Asn | Lys | Ala | Asp | Ile | Ala | Met | Val | Ile | 230 | 235 | 240 |
| Cys | Asp | Thr | Pro | Gln | Lys | Ala | Leu | Val | Leu | Ile | Gly | Asn | Val | Glu | 245 | 250 | 255 |
| Lys | Gly | Phe | Thr | Pro | Ser | Leu | Lys | Val | Ile | Ile | Leu | Met | Asp | Pro | 260 | 265 | 270 |
| Phe | Asp | Asp | Asp | Leu | Lys | Gln | Arg | Gly | Glu | Lys | Ser | Gly | Ile | Glu | 275 | 280 | 285 |
| Ile | Leu | Ser | Leu | Tyr | Asp | Ala | Glu | Asn | Leu | Gly | Lys | Glu | His | Phe | 290 | 295 | 300 |
| Arg | Lys | Pro | Val | Pro | Pro | Ser | Pro | Glu | Asp | Leu | Ser | Val | Ile | Cys | 305 | 310 | 315 |
| Phe | Thr | Ser | Gly | Thr | Thr | Gly | Asp | Pro | Lys | Gly | Ala | Met | Ile | Thr | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Tyr | Asn | Arg | Ser | Gln | Pro | Val | Leu | Gln | Ile | Phe | Val | His |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Gly | Glu | Ser | Leu | Arg | Ser | Ser | Leu | Val | Gly | Val | Val | Val | Pro | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Thr | Asp | Val | Leu | Pro | Ser | Phe | Ala | Ala | Lys | Leu | Gly | Val | Lys | Gly |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Ser | Phe | Glu | Glu | Leu | Cys | Gln | Asn | Gln | Val | Val | Arg | Glu | Ala | Ile |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Leu | Glu | Asp | Leu | Gln | Lys | Ile | Gly | Lys | Glu | Ser | Gly | Leu | Lys | Thr |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Phe | Glu | Gln | Val | Lys | Ala | Ile | Phe | Leu | His | Pro | Glu | Pro | Phe | Ser |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ile | Glu | Asn | Gly | Leu | Leu | Thr | Pro | Thr | Leu | Lys | Ala | Lys | Arg | Gly |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Glu | Leu | Ser | Lys | Tyr | Phe | Arg | Thr | Gln | Ile | Asp | Ser | Leu | Tyr | Glu |
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| His | Ile | Gln | Asp | | | | | | | | | | | |

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 ccaggacatt ggtgaccgc caatccgta tggacgactg gaagcccagc 150
 cccctcatca agccctttgg ggctcggaag aagcggagct ggtaccttac 200
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 atcctggaca ctggcgagc catcagtga gccaatgaag acccagagcc 350
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 agcaaagtat atgtggcagt ggatggcacc acggtgctgg aggatgaggc 500
 ccgggagcag ggccggggca tccatgtcat tgtcctcaac caggccacgg 550
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 <212> PRT
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 Phe Leu Leu Val Thr Val Ile Val Asn Ile Lys Leu Ile Leu Asp
 50 55 60
 Thr Arg Arg Ala Ile Ser Glu Ala Asn Glu Asp Pro Glu Pro Glu
 65 70 75
 Gln Asp Tyr Asp Glu Ala Leu Gly Arg Leu Glu Pro Pro Arg Arg
 80 85 90
 Arg Gly Ser Gly Pro Arg Arg Val Leu Asp Val Glu Val Tyr Ser
 95 100 105
 Ser Arg Ser Lys Val Tyr Val Ala Val Asp Gly Thr Thr Val Leu
 110 115 120
 Glu Asp Glu Ala Arg Glu Gln Gly Arg Gly Ile His Val Ile Val
 125 130 135

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | Gln | Ala | Thr | Gly | His | Val | Met | Ala | Lys | Arg | Val | Phe | Asp | 140 | 145 | 150 |
| Thr | Tyr | Ser | Pro | His | Glu | Asp | Glu | Ala | Met | Val | Leu | Phe | Leu | Asn | 155 | 160 | 165 |
| Met | Val | Ala | Pro | Gly | Arg | Val | Leu | Ile | Cys | Thr | Val | Lys | Asp | Glu | 170 | 175 | 180 |
| Gly | Ser | Phe | His | Leu | Lys | Asp | Thr | Ala | Lys | Ala | Leu | Leu | Arg | Ser | 185 | 190 | 195 |
| Leu | Gly | Ser | Gln | Ala | Gly | Pro | Ala | Leu | Gly | Trp | Arg | Asp | Thr | Trp | 200 | 205 | 210 |
| Ala | Phe | Val | Gly | Arg | Lys | Gly | Gly | Pro | Val | Phe | Gly | Glu | Lys | His | 215 | 220 | 225 |
| Ser | Lys | Ser | Pro | Ala | Leu | Ser | Ser | Trp | Gly | Asp | Pro | Val | Leu | Leu | 230 | 235 | 240 |
| Lys | Thr | Asp | Val | Pro | Leu | Ser | Ser | Ala | Glu | Glu | Ala | Glu | Cys | His | 245 | 250 | 255 |
| Trp | Ala | Asp | Thr | Glu | Leu | Asn | Arg | Arg | Arg | Arg | Arg | Phe | Cys | Ser | 260 | 265 | 270 |
| Lys | Val | Glu | Gly | Tyr | Gly | Ser | Val | Cys | Ser | Cys | Lys | Asp | Pro | Thr | 275 | 280 | 285 |
| Pro | Ile | Glu | Phe | Ser | Pro | Asp | Pro | Leu | Pro | Asp | Asn | Lys | Val | Leu | 290 | 295 | 300 |
| Asn | Val | Pro | Val | Ala | Val | Ile | Ala | Gly | Asn | Arg | Pro | Asn | Tyr | Leu | 305 | 310 | 315 |
| Tyr | Arg | Met | Leu | Arg | Ser | Leu | Leu | Ser | Ala | Gln | Gly | Val | Ser | Pro | 320 | 325 | 330 |
| Gln | Met | Ile | Thr | Val | Phe | Ile | Asp | Gly | Tyr | Tyr | Glu | Glu | Pro | Met | 335 | 340 | 345 |
| Asp | Val | Val | Ala | Leu | Phe | Gly | Leu | Arg | Gly | Ile | Gln | His | Thr | Pro | 350 | 355 | 360 |
| Ile | Ser | Ile | Lys | Asn | Ala | Arg | Val | Ser | Gln | His | Tyr | Lys | Ala | Ser | 365 | 370 | 375 |
| Leu | Thr | Ala | Thr | Phe | Asn | Leu | Phe | Pro | Glu | Ala | Lys | Phe | Ala | Val | 380 | 385 | 390 |
| Val | Leu | Glu | Glu | Asp | Leu | Asp | Ile | Ala | Val | Asp | Phe | Phe | Ser | Phe | 395 | 400 | 405 |
| Leu | Ser | Gln | Ser | Ile | His | Leu | Leu | Glu | Glu | Asp | Asp | Ser | Leu | Tyr | 410 | 415 | 420 |
| Cys | Ile | Ser | Ala | Trp | Asn | Asp | Gln | Gly | Tyr | Glu | His | Thr | Ala | Glu | | | |

| | 425 | | 430 | | 435 |
|-----------------|---------------------|---------------------|-----|--|-----|
| Asp Pro Ala Leu | Leu Tyr Arg Val Glu | Thr Met Pro Gly Leu | Gly | | |
| | 440 | | 445 | | 450 |
| Trp Val Leu Arg | Arg Ser Leu Tyr Lys | Glu Glu Leu Glu Pro | Lys | | |
| | 455 | | 460 | | 465 |
| Trp Pro Thr Pro | Glu Lys Leu Trp Asp | Trp Asp Met Trp Met | Arg | | |
| | 470 | | 475 | | 480 |
| Met Pro Glu Gln | Arg Arg Gly Arg Glu | Cys Ile Ile Pro Asp | Val | | |
| | 485 | | 490 | | 495 |
| Ser Arg Ser Tyr | His Phe Gly Ile Val | Gly Leu Asn Met Asn | Gly | | |
| | 500 | | 505 | | 510 |
| Tyr Phe His Glu | Ala Tyr Phe Lys Lys | His Lys Phe Asn Thr | Val | | |
| | 515 | | 520 | | 525 |
| Pro Gly Val Gln | Leu Arg Asn Val Asp | Ser Leu Lys Lys Glu | Ala | | |
| | 530 | | 535 | | 540 |
| Tyr Glu Val Glu | Val His Arg Leu Leu | Ser Glu Ala Glu Val | Leu | | |
| | 545 | | 550 | | 555 |
| Asp His Ser Lys | Asn Pro Cys Glu Asp | Ser Phe Leu Pro Asp | Thr | | |
| | 560 | | 565 | | 570 |
| Glu Gly His Thr | Tyr Val Ala Phe Ile | Arg Met Glu Lys Asp | Asp | | |
| | 575 | | 580 | | 585 |
| Asp Phe Thr Thr | Trp Thr Gln Leu Ala | Lys Cys Leu His Ile | Trp | | |
| | 590 | | 595 | | 600 |
| Asp Leu Asp Val | Arg Gly Asn His Arg | Gly Leu Trp Arg Leu | Phe | | |
| | 605 | | 610 | | 615 |
| Arg Lys Lys Asn | His Phe Leu Val Val | Gly Val Pro Ala Ser | Pro | | |
| | 620 | | 625 | | 630 |
| Tyr Ser Val Lys | Lys Pro Pro Ser Val | Thr Pro Ile Phe Leu | Glu | | |
| | 635 | | 640 | | 645 |
| Pro Pro Pro Lys | Glu Glu Gly Ala Pro | Gly Ala Pro Glu Gln | Thr | | |
| | 650 | | 655 | | 660 |

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<212> DNA

<213> Artificial

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<400> 90

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<210> 91

<211> 24

<212> DNA

<213> Artificial

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<222> 1-24

<223> Synthetic construct.

<400> 91

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<210> 92

<211> 26

<212> DNA

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<222> 1-26

<223> Synthetic construct.

<400> 92

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<210> 93

<211> 47

<212> DNA

<213> Artificial

<220>

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<222> 1-47

<223> Synthetic construct.

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<210> 94

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<212> DNA

<213> Homo sapiens

<400> 94

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 <213> Homo sapiens

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 Ala Leu Tyr Glu Asp Ile Leu Glu Gly Lys His His Gln Ala Ser
 65 70 75
 Glu Thr His Asn Val Ile Ala Ser Asp Lys Ala Ala Glu Lys Ser
 80 85 90
 Val Val His Glu His Glu His Ser His Asp His Thr Gln Leu His
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 Ala Tyr Ile Gly Val Ser Leu Val Leu Gly Phe Val Phe Met Leu
 110 115 120
 Leu Val Asp Gln Ile Gly Asn Ser His Val His Ser Thr Asp Asp
 125 130 135
 Pro Glu Ala Ala Arg Ser Ser Asn Ser Lys Ile Thr Thr Thr Leu
 140 145 150
 Gly Leu Val Val His Ala Ala Ala Asp Gly Val Ala Leu Gly Ala
 155 160 165
 Ala Ala Ser Thr Ser Gln Thr Ser Val Gln Leu Ile Val Phe Val
 170 175 180
 Ala Ile Met Leu His Lys Ala Pro Ala Ala Phe Gly Leu Val Ser
 185 190 195
 Phe Leu Met His Ala Gly Leu Glu Arg Asn Arg Ile Arg Lys His
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 Leu Leu Val Phe Ala Leu Ala Ala Pro Val Met Ser Met Val Thr
 215 220 225
 Tyr Leu Gly Leu Ser Lys Ser Ser Lys Glu Ala Leu Ser Glu Val

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 230 | | 235 | | 240 | | | | | | | | | |
| Asn | Ala | Thr | Gly | Val | Ala | Met | Leu | Phe | Ser | Ala | Gly | Thr | Phe | Leu |
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| Tyr | Val | Ala | Thr | Val | His | Val | Leu | Pro | Glu | Val | Gly | Gly | Ile | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| His | Ser | His | Lys | Pro | Asp | Ala | Thr | Gly | Gly | Arg | Gly | Leu | Ser | Arg |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Leu | Glu | Val | Ala | Ala | Leu | Val | Leu | Gly | Cys | Leu | Ile | Pro | Leu | Ile |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Ser | Val | Gly | His | Gln | His | | | | | | | | |
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<220>
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<212> DNA

<213> Homo sapiens

<400> 99

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<210> 100

<211> 401

<212> PRT

<213> Homo sapiens

<400> 100

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| Met | Met | Gly | Leu | Gly | Asn | Gly | Arg | Arg | Ser | Met | Lys | Ser | Pro | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Val | Leu | Ala | Ala | Leu | Val | Ala | Cys | Ile | Ile | Val | Leu | Gly | Phe |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asn | Tyr | Trp | Ile | Ala | Ser | Ser | Arg | Ser | Val | Asp | Leu | Gln | Thr | Arg |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ile | Met | Glu | Leu | Glu | Gly | Arg | Val | Arg | Arg | Ala | Ala | Ala | Glu | Arg |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Gly | Ala | Val | Glu | Leu | Lys | Lys | Asn | Glu | Phe | Gln | Gly | Glu | Leu | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Gln | Arg | Glu | Gln | Leu | Asp | Lys | Ile | Gln | Ser | Ser | His | Asn | Phe |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Gln | Leu | Glu | Ser | Val | Asn | Lys | Leu | Tyr | Gln | Asp | Glu | Lys | Ala | Val |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Leu | Val | Asn | Asn | Ile | Thr | Thr | Gly | Glu | Arg | Leu | Ile | Arg | Val | Leu |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Gln | Asp | Gln | Leu | Lys | Thr | Leu | Gln | Arg | Asn | Tyr | Gly | Arg | Leu | Gln |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Gln | Asp | Val | Leu | Gln | Phe | Gln | Lys | Asn | Gln | Thr | Asn | Leu | Glu | Arg |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Lys | Phe | Ser | Tyr | Asp | Leu | Ser | Gln | Cys | Ile | Asn | Gln | Met | Lys | Glu |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Val | Lys | Glu | Gln | Cys | Glu | Glu | Arg | Ile | Glu | Glu | Val | Thr | Lys | Lys |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Gly | Asn | Glu | Ala | Val | Ala | Ser | Arg | Asp | Leu | Ser | Glu | Asn | Asn | Asp |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Gln | Arg | Gln | Gln | Leu | Gln | Ala | Leu | Ser | Glu | Pro | Gln | Pro | Arg | Leu |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Gln | Ala | Ala | Gly | Leu | Pro | His | Thr | Glu | Val | Pro | Gln | Gly | Lys | Gly |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Asn | Val | Leu | Gly | Asn | Ser | Lys | Ser | Gln | Thr | Pro | Ala | Pro | Ser | Ser |
| | | | 230 | | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Val | Leu | Asp | Ser | Lys | Arg | Gln | Val | Glu | Lys | Glu | Glu | Thr | 245 | 250 | 255 |
| Asn | Glu | Ile | Gln | Val | Val | Asn | Glu | Glu | Pro | Gln | Arg | Asp | Arg | Leu | 260 | 265 | 270 |
| Pro | Gln | Glu | Pro | Gly | Arg | Glu | Gln | Val | Val | Glu | Asp | Arg | Pro | Val | 275 | 280 | 285 |
| Gly | Gly | Arg | Gly | Phe | Gly | Gly | Ala | Gly | Glu | Leu | Gly | Gln | Thr | Pro | 290 | 295 | 300 |
| Gln | Val | Gln | Ala | Ala | Leu | Ser | Val | Ser | Gln | Glu | Asn | Pro | Glu | Met | 305 | 310 | 315 |
| Glu | Gly | Pro | Glu | Arg | Asp | Gln | Leu | Val | Ile | Pro | Asp | Gly | Gln | Glu | 320 | 325 | 330 |
| Glu | Glu | Gln | Glu | Ala | Ala | Gly | Glu | Gly | Arg | Asn | Gln | Gln | Lys | Leu | 335 | 340 | 345 |
| Arg | Gly | Glu | Asp | Asp | Tyr | Asn | Met | Asp | Glu | Asn | Glu | Ala | Glu | Ser | 350 | 355 | 360 |
| Glu | Thr | Asp | Lys | Gln | Ala | Ala | Leu | Ala | Gly | Asn | Asp | Arg | Asn | Ile | 365 | 370 | 375 |
| Asp | Val | Phe | Asn | Val | Glu | Asp | Gln | Lys | Arg | Asp | Thr | Ile | Asn | Leu | 380 | 385 | 390 |
| Leu | Asp | Gln | Arg | Glu | Lys | Arg | Asn | His | Thr | Leu | | | | | 395 | 400 | |

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 <211> 3671
 <212> DNA
 <213> Homo sapiens

<400> 101
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 <212> PRT
 <213> Homo sapiens

<400> 102

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Phe | Tyr | Ala | Gly | Ile | Ala | Leu | Phe | Thr | Ser | Gly | Phe | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Arg | Leu | Glu | Leu | Thr | Asn | His | Ser | Ser | Cys | Gln | Glu | Pro | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Pro | Gly | Ser | Leu | Pro | Trp | Gly | Ser | Gln | Gly | Lys | Pro | Gly | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Trp | Met | Ala | Ser | Arg | Phe | Ser | Arg | Val | Val | Leu | Val | Leu | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Ala | Leu | Arg | Phe | Asp | Phe | Ala | Gln | Pro | Gln | His | Ser | His | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Arg | Glu | Pro | Pro | Val | Ser | Leu | Pro | Phe | Leu | Gly | Lys | Leu | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Leu | Gln | Arg | Ile | Leu | Glu | Ile | Gln | Pro | His | His | Ala | Arg | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Tyr | Arg | Ser | Gln | Val | Asp | Pro | Pro | Thr | Thr | Thr | Met | Gln | Arg | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Ala | Leu | Thr | Thr | Gly | Ser | Leu | Pro | Thr | Phe | Ile | Asp | Ala | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Asn | Phe | Ala | Ser | His | Ala | Ile | Val | Glu | Asp | Asn | Leu | Ile | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gln | Leu | Thr | Ser | Ala | Gly | Arg | Arg | Val | Val | Phe | Met | Gly | Asp | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Trp | Lys | Asp | Leu | Phe | Pro | Gly | Ala | Phe | Ser | Lys | Ala | Phe | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Pro | Ser | Phe | Asn | Val | Arg | Asp | Leu | Asp | Thr | Val | Asp | Asn | Gly |

| | 200 | 205 | 210 |
|-----------------|----------------------------|----------------------------|------------|
| Ile Leu Glu His | Leu Tyr Pro Thr Met 215 | Asp Ser Gly Glu Trp 220 | Asp 225 |
| Val Leu Ile Ala | His Phe Leu Gly Val 230 | Asp His Cys Gly His 235 | Lys 240 |
| His Gly Pro His | His Pro Glu Met Ala 245 | Lys Lys Leu Ser Gln 250 | Met 255 |
| Asp Gln Val Ile | Gln Gly Leu Val Glu 260 | Arg Leu Glu Asn Asp 265 | Thr 270 |
| Leu Leu Val Val | Ala Gly Asp His Gly 275 | Met Thr Thr Asn Gly 280 | Asp 285 |
| His Gly Gly Asp | Ser Glu Leu Glu Val 290 | Ser Ala Ala Leu Phe 295 | Leu 300 |
| Tyr Ser Pro Thr | Ala Val Phe Pro Ser 305 | Thr Pro Pro Glu Glu 310 | Pro 315 |
| Glu Val Ile Pro | Gln Val Ser Leu Val 320 | Pro Thr Leu Ala Leu 325 | Leu 330 |
| Leu Gly Leu Pro | Ile Pro Phe Gly Asn 335 | Ile Gly Glu Val Met 340 | Ala 345 |
| Glu Leu Phe Ser | Gly Gly Glu Asp Ser 350 | Gln Pro His Ser Ser 355 | Ala 360 |
| Leu Ala Gln Ala | Ser Ala Leu His Leu 365 | Asn Ala Gln Gln Val 370 | Ser 375 |
| Arg Phe Leu His | Thr Tyr Ser Ala Ala 380 | Thr Gln Asp Leu Gln 385 | Ala 390 |
| Lys Glu Leu His | Gln Leu Gln Asn Leu 395 | Phe Ser Lys Ala Ser 400 | Ala 405 |
| Asp Tyr Gln Trp | Leu Leu Gln Ser Pro 410 | Lys Gly Ala Glu Ala 415 | Thr 420 |
| Leu Pro Thr Val | Ile Ala Glu Leu Gln 425 | Gln Phe Leu Arg Gly 430 | Ala 435 |
| Arg Ala Met Cys | Ile Glu Ser Trp Ala 440 | Arg Phe Ser Leu Val 445 | Arg 450 |
| Met Ala Gly Gly | Thr Ala Leu Leu Ala 455 | Ala Ser Cys Phe Ile 460 | Cys 465 |
| Leu Leu Ala Ser | Gln Trp Ala Ile Ser 470 | Pro Gly Phe Pro Phe 475 | Cys 480 |
| Pro Leu Leu Leu | Thr Pro Val Ala Trp 485 | Gly Leu Val Gly Ala 490 | Ile 495 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Tyr Ala Gly | Leu Leu Gly Thr Ile | Glu Leu Lys Leu Asp | Leu |
| | 500 | 505 | 510 |
| Val Leu Leu Gly | Ala Val Ala Ala Val | Ser Ser Phe Leu Pro | Phe |
| | 515 | 520 | 525 |
| Leu Trp Lys Ala | Trp Ala Gly Trp Gly | Ser Lys Arg Pro Leu | Ala |
| | 530 | 535 | 540 |
| Thr Leu Phe Pro | Ile Pro Gly Pro Val | Leu Leu Leu Leu Leu | Phe |
| | 545 | 550 | 555 |
| Arg Leu Ala Val | Phe Phe Ser Asp Ser | Phe Val Val Ala Glu | Ala |
| | 560 | 565 | 570 |
| Arg Ala Thr Pro | Phe Leu Leu Gly Ser | Phe Ile Leu Leu Leu | Val |
| | 575 | 580 | 585 |
| Val Gln Leu His | Trp Glu Gly Gln Leu | Leu Pro Pro Lys Leu | Leu |
| | 590 | 595 | 600 |
| Thr Met Pro Arg | Leu Gly Thr Ser Ala | Thr Thr Asn Pro Pro | Arg |
| | 605 | 610 | 615 |
| His Asn Gly Ala | Tyr Ala Leu Arg Leu | Gly Ile Gly Leu Leu | Leu |
| | 620 | 625 | 630 |
| Cys Thr Arg Leu | Ala Gly Leu Phe His | Arg Cys Pro Glu Glu | Thr |
| | 635 | 640 | 645 |
| Pro Val Cys His | Ser Ser Pro Trp Leu | Ser Pro Leu Ala Ser | Met |
| | 650 | 655 | 660 |
| Val Gly Gly Arg | Ala Lys Asn Leu Trp | Tyr Gly Ala Cys Val | Ala |
| | 665 | 670 | 675 |
| Ala Leu Val Ala | Leu Leu Ala Ala Val | Arg Leu Trp Leu Arg | Arg |
| | 680 | 685 | 690 |
| Tyr Gly Asn Leu | Lys Ser Pro Glu Pro | Pro Met Leu Phe Val | Arg |
| | 695 | 700 | 705 |
| Trp Gly Leu Pro | Leu Met Ala Leu Gly | Thr Ala Ala Tyr Trp | Ala |
| | 710 | 715 | 720 |
| Leu Ala Ser Gly | Ala Asp Glu Ala Pro | Pro Arg Leu Arg Val | Leu |
| | 725 | 730 | 735 |
| Val Ser Gly Ala | Ser Met Val Leu Pro | Arg Ala Val Ala Gly | Leu |
| | 740 | 745 | 750 |
| Ala Ala Ser Gly | Leu Ala Leu Leu Leu | Trp Lys Pro Val Thr | Val |
| | 755 | 760 | 765 |
| Leu Val Lys Ala | Gly Ala Gly Ala Pro | Arg Thr Arg Thr Val | Leu |
| | 770 | 775 | 780 |
| Thr Pro Phe Ser | Gly Pro Pro Thr Ser | Gln Ala Asp Leu Asp | Tyr |

Arg Gln Leu Phe Leu Ala Gln Gln Arg
1085

<210> 103

<211> 1743

<212> DNA

<213> Homo sapiens

<400> 103

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cttatccatc aacatgaaga atgtcctaca atggactcca ccagagggtc 150
ttcaaggagt taaagttact tacactgtgc agtatttcat cacaaattgg 200
cccaccagag gtggcactga ctacagatga gaagtccatt tctgttgctc 250
tgacagctcc agagaagtgg aagagaaatc cagaagacct tcctgtttcc 300
atgcaacaaa tatactccaa tctgaagtat aacgtgtctg tgttgaatac 350
taaatcaaac agaacgtggt ccagtggtg gaccaaccac acgctggtgc 400
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gactttgaaa gatcaatcat cagagttcaa ggctaaaatc atcttctggt 550
atgttttgcc catatctatt accgtgtttc ttttttctgt gatgggctat 600
tccatctacc gatatatcca cgttggcaaa gagaaacacc cagcaaattt 650
gattttgatt tatggaaatg aatttgacaa aagattcttt gtgcctgctg 700
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gctgtgtatt ccttgcgtgt ccagcttcga ccaggattca gagggctgcg 1300
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<210> 104

<211> 442

<212> PRT

<213> Homo sapiens

<400> 104

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Tyr | Asn | Gly | Leu | His | Gln | Arg | Val | Phe | Lys | Glu | Leu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Thr | Leu | Cys | Ser | Ile | Ser | Ser | Gln | Ile | Gly | Pro | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Ala | Leu | Thr | Thr | Asp | Glu | Lys | Ser | Ile | Ser | Val | Val | Leu | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Pro | Glu | Lys | Trp | Lys | Arg | Asn | Pro | Glu | Asp | Leu | Pro | Val | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Met | Gln | Gln | Ile | Tyr | Ser | Asn | Leu | Lys | Tyr | Asn | Val | Ser | Val | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Thr | Lys | Ser | Asn | Arg | Thr | Trp | Ser | Gln | Cys | Val | Thr | Asn | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Leu | Val | Leu | Thr | Trp | Leu | Glu | Pro | Asn | Thr | Leu | Tyr | Cys | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| His | Val | Glu | Ser | Phe | Val | Pro | Gly | Pro | Pro | Arg | Arg | Ala | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Glu | Lys | Gln | Cys | Ala | Arg | Thr | Leu | Lys | Asp | Gln | Ser | Ser | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Phe | Lys | Ala | Lys | Ile | Ile | Phe | Trp | Tyr | Val | Leu | Pro | Ile | Ser | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Val | Phe | Leu | Phe | Ser | Val | Met | Gly | Tyr | Ser | Ile | Tyr | Arg | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | His | Val | Gly | Lys | Glu | Lys | His | Pro | Ala | Asn | Leu | Ile | Leu | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Gly | Asn | Glu | Phe | Asp | Lys | Arg | Phe | Phe | Val | Pro | Ala | Glu | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Val | Ile | Asn | Phe | Ile | Thr | Leu | Asn | Ile | Ser | Asp | Asp | Ser | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Ser | His | Gln | Asp | Met | Ser | Leu | Leu | Gly | Lys | Ser | Ser | Asp | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Ser | Leu | Asn | Asp | Pro | Gln | Pro | Ser | Gly | Asn | Leu | Arg | Pro | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Glu | Glu | Glu | Glu | Val | Lys | His | Leu | Gly | Tyr | Ala | Ser | His | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Met | Glu | Ile | Phe | Cys | Asp | Ser | Glu | Glu | Asn | Thr | Glu | Gly | Thr | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Thr | Gln | Gln | Glu | Ser | Leu | Ser | Arg | Thr | Ile | Pro | Pro | Asp | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Val | Ile | Glu | Tyr | Glu | Tyr | Asp | Val | Arg | Thr | Thr | Asp | Ile | Cys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Gly | Pro | Glu | Glu | Gln | Glu | Leu | Ser | Leu | Gln | Glu | Glu | Val | Ser | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Gln | Gly | Thr | Leu | Leu | Glu | Ser | Gln | Ala | Ala | Leu | Ala | Val | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gly | Pro | Gln | Thr | Leu | Gln | Tyr | Ser | Tyr | Thr | Pro | Gln | Leu | Gln | Asp | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Leu | Asp | Pro | Leu | Ala | Gln | Glu | His | Thr | Asp | Ser | Glu | Glu | Gly | Pro | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Glu | Glu | Pro | Ser | Thr | Thr | Leu | Val | Asp | Trp | Asp | Pro | Gln | Thr | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | Arg | Leu | Cys | Ile | Pro | Ser | Leu | Ser | Ser | Phe | Asp | Gln | Asp | Ser | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Glu | Gly | Cys | Glu | Pro | Ser | Glu | Gly | Asp | Gly | Leu | Gly | Glu | Glu | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Leu | Leu | Ser | Arg | Leu | Tyr | Glu | Glu | Pro | Ala | Pro | Asp | Arg | Pro | Pro | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Gly | Glu | Asn | Glu | Thr | Tyr | Leu | Met | Gln | Phe | Met | Glu | Glu | Trp | Gly | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Tyr | Val | Gln | Met | Glu | Asn | | | | | | | | | |
| | | | | 440 | | | | | | | | | | | |

<210> 105

<211> 21
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<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct

<400> 105
cgctgctgct gttgctcctg g 21

<210> 106
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 106
cagtgtgccca ggactttg 18

<210> 107
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 107
agtcgcaggc agcgttgg 18

<210> 108
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 108
ctcctccgag tctgtgtgct cctgc 25

<210> 109
<211> 51
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence

<222> 1-51
<223> Synthetic construct.

<400> 109
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<210> 110
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 110
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tctgctgact gtggccaccg ccctgatgct gcccgtaag cccccgcag 150
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cttctgtctg cgagcccgtt ggggtggtct gcccgccac tgcttcagcc 300
acagagacct ccgcaactgg ctggtggtgc tgggcgcca cgtcctgagt 350
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gccgctccag gcctggaatg ttccgtggct gggcccccac ggaagcctga 1000
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aaaaaaaaa gaaa 1114

<210> 111

<211> 283

<212> PRT

<213> Homo sapiens

<400> 111

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Gly | Leu | Arg | Gly | Trp | Gly | Arg | Pro | Leu | Leu | Thr | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Thr | Ala | Leu | Met | Leu | Pro | Val | Lys | Pro | Pro | Ala | Gly | Ser | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ala | Gln | Ile | Ile | Gly | Gly | His | Glu | Val | Thr | Pro | His | Ser | Arg |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Pro | Tyr | Met | Ala | Ser | Val | Arg | Phe | Gly | Gly | Gln | His | His | Cys | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Phe | Leu | Leu | Arg | Ala | Arg | Trp | Val | Val | Ser | Ala | Ala | His | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Ser | His | Arg | Asp | Leu | Arg | Thr | Gly | Leu | Val | Val | Leu | Gly | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| His | Val | Leu | Ser | Thr | Ala | Glu | Pro | Thr | Gln | Gln | Val | Phe | Gly | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asp | Ala | Leu | Thr | Thr | His | Pro | Asp | Tyr | His | Pro | Met | Thr | His | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Asp | Ile | Cys | Leu | Leu | Arg | Leu | Asn | Gly | Ser | Ala | Val | Leu | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Ala | Val | Gly | Leu | Leu | Arg | Leu | Pro | Gly | Arg | Arg | Ala | Arg | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Thr | Ala | Gly | Thr | Arg | Cys | Arg | Val | Ala | Gly | Trp | Gly | Phe | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Asp | Phe | Glu | Glu | Leu | Pro | Pro | Gly | Leu | Met | Glu | Ala | Lys | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Arg | Val | Leu | Asp | Pro | Asp | Val | Cys | Asn | Ser | Ser | Trp | Lys | Gly | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Thr | Leu | Thr | Met | Leu | Cys | Thr | Arg | Ser | Gly | Asp | Ser | His | Arg |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Gly | Phe | Cys | Ser | Ala | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Asn | Arg | Ala | His | Gly | Leu | Val | Ser | Phe | Ser | Gly | Leu | Trp | Cys | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Pro | Lys | Thr | Pro | Asp | Val | Tyr | Thr | Gln | Val | Ser | Ala | Phe | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |

Ala Trp Ile Trp Asp Val Val Arg Arg Ser Ser Pro Gln Pro Gly
 260 265 270

Pro Leu Pro Gly Thr Thr Arg Pro Pro Gly Glu Ala Ala
 275 280

<210> 112
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 112
 gacgtctgca acagctcctg gaag 24

<210> 113
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 113
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<210> 114
 <211> 44
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-44
 <223> Synthetic construct.

<400> 114
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<210> 115
 <211> 1808
 <212> DNA
 <213> Homo sapiens

<400> 115
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 cgctgtcggc gctgggcacg gtagcaggcg ccgccgtgct gctcaaggac 150
 tatgtcaccg gtggggcttg ccccagcaag gccaccatcc ctgggaagac 200

gagagcaggt gcaggtgtca tcccaggttc aggctctgca cggcatggag 1700
 tgggaacccc accagctgct gctacaggac ctgggattgc ctgggactcc 1750
 caccttcccta tcaattctca tggtagtcca aactgcagac tctcaaactt 1800
 gctcattt 1808

<210> 116
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 116
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 20 25 30
 Pro Ser Lys Ala Thr Ile Pro Gly Lys Thr Val Ile Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Gln Thr Ala Leu Glu Leu Ala Arg
 50 55 60
 Arg Gly Gly Asn Ile Ile Leu Ala Cys Arg Asp Met Glu Lys Cys
 65 70 75
 Glu Ala Ala Ala Lys Asp Ile Arg Gly Glu Thr Leu Asn His His
 80 85 90
 Val Asn Ala Arg His Leu Asp Leu Ala Ser Leu Lys Ser Ile Arg
 95 100 105
 Glu Phe Ala Ala Lys Ile Ile Glu Glu Glu Glu Arg Val Asp Ile
 110 115 120
 Leu Ile Asn Asn Ala Gly Val Met Arg Cys Pro His Trp Thr Thr
 125 130 135
 Glu Asp Gly Phe Glu Met Gln Phe Gly Val Asn His Leu Gly His
 140 145 150
 Phe Leu Leu Thr Asn Leu Leu Leu Asp Lys Leu Lys Ala Ser Ala
 155 160 165
 Pro Ser Arg Ile Ile Asn Leu Ser Ser Leu Ala His Val Ala Gly
 170 175 180
 His Ile Asp Phe Asp Asp Leu Asn Trp Gln Thr Arg Lys Tyr Asn
 185 190 195
 Thr Lys Ala Ala Tyr Cys Gln Ser Lys Leu Ala Ile Val Leu Phe
 200 205 210
 Thr Lys Glu Leu Ser Arg Arg Leu Gln Gly Ser Gly Val Thr Val
 215 220 225

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Leu | His | Pro | Gly | Val | Ala | Arg | Thr | Glu | Leu | Gly | Arg | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Gly | Ile | His | Gly | Ser | Thr | Phe | Ser | Ser | Thr | Thr | Leu | Gly | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Phe | Trp | Leu | Leu | Val | Lys | Ser | Pro | Glu | Leu | Ala | Ala | Gln | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ser | Thr | Tyr | Leu | Ala | Val | Ala | Glu | Glu | Leu | Ala | Asp | Val | Ser | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Tyr | Phe | Asp | Gly | Leu | Lys | Gln | Lys | Ala | Pro | Ala | Pro | Glu | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Asp | Glu | Glu | Val | Ala | Arg | Arg | Leu | Trp | Ala | Glu | Ser | Ala | Arg |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Leu | Val | Gly | Leu | Glu | Ala | Pro | Ser | Val | Arg | Glu | Gln | Pro | Leu | Pro |
| | | | | 320 | | | | | 325 | | | | | 330 |

Arg

<210> 117
 <211> 2249
 <212> DNA
 <213> Homo sapiens

<400> 117
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 ctggcggtgc tggcgctcgg gacaggagac ccagaaaggg ctgcggctcg 100
 gggcgacacg ttctcggcgc tgaccagcgt ggcgcgcgcc ctggcgccccg 150
 agcgccggct gctggggctg ctgaggcggg acctgcgcgg ggaggaggcg 200
 cggtgcgggg acctgactag attctacgac aaggtaacttt ctttgcata 250
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 aacgcctgca gtctgactgg aggaatgtgg tacatagtct ggaggccagt 350
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agatgccttg gatcacttgg cctttgctta tttccgggca ggaaatgttt 750
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 aagaggatgg ccaggaatgt cttgaaatat gaaaggctct tggcagagag 850
 cccaaccac gtggtagctg aggctgtcat ccagaggccc aatatacccc 900
 acctgcagac cagagacacc tacgaggggc tatgtcagac cctgggttcc 950
 cagcccactc tctaccagat ccctagcctc tactgttcct atgagaccaa 1000
 ttccaacgcc tacctgctgc tccagcccat ccggaaggag gtcatccacc 1050
 tggagcccta cattgctctc taccatgact tcgtcagtga ctcagaggct 1100
 cagaaaatta gagaacttgc agaaccatgg ctacagaggt cagtgggtggc 1150
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 ggctgaagga cactgttgac caaaaactgg tgaccctcaa ccaccgcatt 1250
 gctgccctca caggccttga tgtccggcct ccctatgcag agtatctgca 1300
 ggtggtgaac tatggcatcg gaggacacta tgagcctcac tttgaccatg 1350
 ctacgtcacc aagcagcccc ctctacagaa tgaagtcagg aaaccgagtt 1400
 gcaacattta tgatctatct gagctcggtg gaagctggag gagccacagc 1450
 cttcatctat gccaacctca gcgtgcctgt ggtaggaat gcagcactgt 1500
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 gctggctgtc ctgtcctggt gggagataag tgggtggcca acaagtggat 1600
 acatgagtat ggacaggaat tccgcagacc ctgcagctcc agccctgaag 1650
 actgaactgt tggcagagag aagctgggtg agtcctgtgg ctttccagag 1700
 aagccaggag caaaagctg gggtaggaga ggagaaagca gagcagcctc 1750
 ctggaagaag gccttgtcag ctttgtctgt gcctcgcaa tcagaggcaa 1800
 gggagagggt gtiaccaggg gacactgaga atgtacattt gatctgcccc 1850
 agccacggaa gtcagagtag gatgcacagt acaaaggagg ggggagtgga 1900
 ggctgagag ggaagtttct ggagttcaga tactctctgt tgggaacagg 1950
 acatctcaac agtctcaggt tcgatcagtg ggtcttttgg cactttgaac 2000
 cttgaccaca gggaccaaga agtggcaatg aggacacctg caggaggggc 2050
 tagcctgact ccagaactt taagactttc tccccactgc cttctgctgc 2100
 agccaagca gggagtgtcc ccctcccaga agcatatccc agatgagtgg 2150

tacattatat aaggattttt tttaagttga aaacaacttt cttttctttt 2200

tgtatgatgg ttttttaaca cagtcattaa aaatgtttat aaatcaaaa 2249

<210> 118

<211> 544

<212> PRT

<213> Homo sapiens

<400> 118

Met Gly Pro Gly Ala Arg Leu Ala Ala Leu Leu Ala Val Leu Ala
1 5 10 15

Leu Gly Thr Gly Asp Pro Glu Arg Ala Ala Ala Arg Gly Asp Thr
20 25 30

Phe Ser Ala Leu Thr Ser Val Ala Arg Ala Leu Ala Pro Glu Arg
35 40 45

Arg Leu Leu Gly Leu Leu Arg Arg Tyr Leu Arg Gly Glu Glu Ala
50 55 60

Arg Leu Arg Asp Leu Thr Arg Phe Tyr Asp Lys Val Leu Ser Leu
65 70 75

His Glu Asp Ser Thr Thr Pro Val Ala Asn Pro Leu Leu Ala Phe
80 85 90

Thr Leu Ile Lys Arg Leu Gln Ser Asp Trp Arg Asn Val Val His
95 100 105

Ser Leu Glu Ala Ser Glu Asn Ile Arg Ala Leu Lys Asp Gly Tyr
110 115 120

Glu Lys Val Glu Gln Asp Leu Pro Ala Phe Glu Asp Leu Glu Gly
125 130 135

Ala Ala Arg Ala Leu Met Arg Leu Gln Asp Val Tyr Met Leu Asn
140 145 150

Val Lys Gly Leu Ala Arg Gly Val Phe Gln Arg Val Thr Gly Ser
155 160 165

Ala Ile Thr Asp Leu Tyr Ser Pro Lys Arg Leu Phe Ser Leu Thr
170 175 180

Gly Asp Asp Cys Phe Gln Val Gly Lys Val Ala Tyr Asp Met Gly
185 190 195

Asp Tyr Tyr His Ala Ile Pro Trp Leu Glu Glu Ala Val Ser Leu
200 205 210

Phe Arg Gly Ser Tyr Gly Glu Trp Lys Thr Glu Asp Glu Ala Ser
215 220 225

Leu Glu Asp Ala Leu Asp His Leu Ala Phe Ala Tyr Phe Arg Ala
230 235 240

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Val | Ser | Cys | Ala | Leu | Ser | Leu | Ser | Arg | Glu | Phe | Leu | Leu | 245 | 250 | 255 |
| Tyr | Ser | Pro | Asp | Asn | Lys | Arg | Met | Ala | Arg | Asn | Val | Leu | Lys | Tyr | 260 | 265 | 270 |
| Glu | Arg | Leu | Leu | Ala | Glu | Ser | Pro | Asn | His | Val | Val | Ala | Glu | Ala | 275 | 280 | 285 |
| Val | Ile | Gln | Arg | Pro | Asn | Ile | Pro | His | Leu | Gln | Thr | Arg | Asp | Thr | 290 | 295 | 300 |
| Tyr | Glu | Gly | Leu | Cys | Gln | Thr | Leu | Gly | Ser | Gln | Pro | Thr | Leu | Tyr | 305 | 310 | 315 |
| Gln | Ile | Pro | Ser | Leu | Tyr | Cys | Ser | Tyr | Glu | Thr | Asn | Ser | Asn | Ala | 320 | 325 | 330 |
| Tyr | Leu | Leu | Leu | Gln | Pro | Ile | Arg | Lys | Glu | Val | Ile | His | Leu | Glu | 335 | 340 | 345 |
| Pro | Tyr | Ile | Ala | Leu | Tyr | His | Asp | Phe | Val | Ser | Asp | Ser | Glu | Ala | 350 | 355 | 360 |
| Gln | Lys | Ile | Arg | Glu | Leu | Ala | Glu | Pro | Trp | Leu | Gln | Arg | Ser | Val | 365 | 370 | 375 |
| Val | Ala | Ser | Gly | Glu | Lys | Gln | Leu | Gln | Val | Glu | Tyr | Arg | Ile | Ser | 380 | 385 | 390 |
| Lys | Ser | Ala | Trp | Leu | Lys | Asp | Thr | Val | Asp | Pro | Lys | Leu | Val | Thr | 395 | 400 | 405 |
| Leu | Asn | His | Arg | Ile | Ala | Ala | Leu | Thr | Gly | Leu | Asp | Val | Arg | Pro | 410 | 415 | 420 |
| Pro | Tyr | Ala | Glu | Tyr | Leu | Gln | Val | Val | Asn | Tyr | Gly | Ile | Gly | Gly | 425 | 430 | 435 |
| His | Tyr | Glu | Pro | His | Phe | Asp | His | Ala | Thr | Ser | Pro | Ser | Ser | Pro | 440 | 445 | 450 |
| Leu | Tyr | Arg | Met | Lys | Ser | Gly | Asn | Arg | Val | Ala | Thr | Phe | Met | Ile | 455 | 460 | 465 |
| Tyr | Leu | Ser | Ser | Val | Glu | Ala | Gly | Gly | Ala | Thr | Ala | Phe | Ile | Tyr | 470 | 475 | 480 |
| Ala | Asn | Leu | Ser | Val | Pro | Val | Val | Arg | Asn | Ala | Ala | Leu | Phe | Trp | 485 | 490 | 495 |
| Trp | Asn | Leu | His | Arg | Ser | Gly | Glu | Gly | Asp | Ser | Asp | Thr | Leu | His | 500 | 505 | 510 |
| Ala | Gly | Cys | Pro | Val | Leu | Val | Gly | Asp | Lys | Trp | Val | Ala | Asn | Lys | 515 | 520 | 525 |
| Trp | Ile | His | Glu | Tyr | Gly | Gln | Glu | Phe | Arg | Arg | Pro | Cys | Ser | Ser | | | |

530

535

540

Ser Pro Glu Asp

<210> 119

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 119

cgggacagga gacccagaaa ggg 23

<210> 120

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 120

ggccaagtga tccaaggcat cttc 24

<210> 121

<211> 49

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-49

<223> Synthetic construct.

<400> 121

ctgcgggacc tgactagatt ctacgacaag gtactttctt tgcattggg 49

<210> 122

<211> 1778

<212> DNA

<213> Homo sapiens

<400> 122

gagatagggga gtctgggttt aagttcctgc tccatctcag gagcccctgc 50

tcccaccct aggaagccac cagactccac ggtgtggggc caatcaggtg 100

gaatcggccc tggcaggtgg ggccacgagc gctggctgag ggaccgagcc 150

ggagagcccc ggagcccccg taaccgcgc ggggagcgcc caggatgccg 200

cgcggggact cggagcaggt gcgctactgc gcgcgcttct cctacctctg 250
 gctcaagttt tcaattatca tctattccac cgtgttctgg ctgattgggg 300
 ccctggtcct gtctgtgggc atctatgcag aggttgagcg gcagaaatat 350
 aaaacccttg aaagtgcctt cctggctcca gccatcatcc tcatcctcct 400
 gggcgctcgtc atgttcatgg tctccttcat tgggtgtgctg gcgtccctcc 450
 gtgacaacct gtaccttctc caagcattca tgtacatcct tgggatctgc 500
 ctcatcatgg agctcattgg tggcggtggg gccttgacct tccggaacca 550
 gaccattgac ttctgaacg acaacattcg aagaggaatt gagaactact 600
 atgatgatct ggacttcaaa aacatcatgg actttgttca gaaaaagttc 650
 aagtgtctgtg gcggggagga ctaccgagat tggagcaaga atcagtacca 700
 cgactgcagt gcccctggac ccctggcctg tggggtgccc tacacctgct 750
 gcatcaggaa cagcacagaa gttgtcaaca ccatgtgtgg ctacaaaact 800
 atcgacaagg agcgtttcag tgtgcaggat gtcactacg tgcggggctg 850
 caccaacgcc gtgatcatct ggttcatgga caactacacc atcatggcgt 900
 gcatcctcct gggcatcctg cttccccagt tctgggggt gctgctgacg 950
 ctgctgtaca tcacccgggt ggaggacatc atcatggagc actctgtcac 1000
 tgatgggctc ctggggcccc gtgccaagcc cagcgtggag gcggcaggca 1050
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 ctacagggga gggagagcct gaggcctctg tcagggccca ttcatctct 1400
 ggcagtgcct tggcggtggt attcaaggca gttttgtagc acctgtaatt 1450
 ggggagaggg agtgtgcccc tcggggcagg agggaaggc atctggggaa 1500
 gggcaggagg gaagagctgt ccatgcagcc acgcccattg ccaggttggc 1550
 ctcttctcag cctcccaggt gccttgagcc ctcttgcaag ggcggctgct 1600
 tccttgagcc tagttttttt ttacgtgatt tttgtaacat tcattttttt 1650

gtacagataa caggagtttc tgactaatca aagctggtat ttccccgcat 1700
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 catgttttgt ttgttttta aaaaaaaa 1778

<210> 123
 <211> 294
 <212> PRT
 <213> Homo sapiens

<400> 123
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 Ser Tyr Leu Trp Leu Lys Phe Ser Leu Ile Ile Tyr Ser Thr Val
 20 25 30
 Phe Trp Leu Ile Gly Ala Leu Val Leu Ser Val Gly Ile Tyr Ala
 35 40 45
 Glu Val Glu Arg Gln Lys Tyr Lys Thr Leu Glu Ser Ala Phe Leu
 50 55 60
 Ala Pro Ala Ile Ile Leu Ile Leu Leu Gly Val Val Met Phe Met
 65 70 75
 Val Ser Phe Ile Gly Val Leu Ala Ser Leu Arg Asp Asn Leu Tyr
 80 85 90
 Leu Leu Gln Ala Phe Met Tyr Ile Leu Gly Ile Cys Leu Ile Met
 95 100 105
 Glu Leu Ile Gly Gly Val Val Ala Leu Thr Phe Arg Asn Gln Thr
 110 115 120
 Ile Asp Phe Leu Asn Asp Asn Ile Arg Arg Gly Ile Glu Asn Tyr
 125 130 135
 Tyr Asp Asp Leu Asp Phe Lys Asn Ile Met Asp Phe Val Gln Lys
 140 145 150
 Lys Phe Lys Cys Cys Gly Gly Glu Asp Tyr Arg Asp Trp Ser Lys
 155 160 165
 Asn Gln Tyr His Asp Cys Ser Ala Pro Gly Pro Leu Ala Cys Gly
 170 175 180
 Val Pro Tyr Thr Cys Cys Ile Arg Asn Thr Thr Glu Val Val Asn
 185 190 195
 Thr Met Cys Gly Tyr Lys Thr Ile Asp Lys Glu Arg Phe Ser Val
 200 205 210
 Gln Asp Val Ile Tyr Val Arg Gly Cys Thr Asn Ala Val Ile Ile
 215 220 225
 Trp Phe Met Asp Asn Tyr Thr Ile Met Ala Cys Ile Leu Leu Gly

| | | |
|-------------------------------------|-------------------------|-----|
| 230 | 235 | 240 |
| Ile Leu Leu Pro Gln Phe Leu Gly Val | Leu Leu Thr Leu Leu Tyr | |
| 245 | 250 | 255 |
| Ile Thr Arg Val Glu Asp Ile Ile Met | Glu His Ser Val Thr Asp | |
| 260 | 265 | 270 |
| Gly Leu Leu Gly Pro Gly Ala Lys Pro | Ser Val Glu Ala Ala Gly | |
| 275 | 280 | 285 |
| Thr Gly Cys Cys Leu Cys Tyr Pro Asn | | |
| 290 | | |

<210> 124
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 124
 atcatctatt ccaccgtgtt ctggc 25

<210> 125
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 125
 gacagagtgc tccatgatga tgtcc 25

<210> 126
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 126
 cctgtctgtg ggcatttatg cagagggtga gcggcagaaa tataaaaccc 50

<210> 127
 <211> 1636
 <212> DNA
 <213> Homo sapiens

<400> 127

gaggagcggg ccgaggactc cagcgtgccc aggtctggca tcctgcactt 50
gctgccctct gacacctggg aagatggccg gcccgaggac cttcaccctt 100
ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtcccac 150
tgcagttctc atcctcggcc caaaagtcac caaagaaaag ctgacacagg 200
agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250
agtgccatgc gggaaaagcc agccggaggc atccctgtgc tgggcagcct 300
ggtgaacacc gtctgaagc acatcatctg gctgaaggct atcacagcta 350
acatcctcca gctgcagggtg aagccctcgg ccaatgacca ggagctgcta 400
gtcaagatcc ccttgacat ggtggctgga ttcaacacgc cctgggtcaa 450
gaccatcgtg gaggttccaca tgacgactga ggccaagcc accatccgca 500
tggacaccag tgcaagtggc cccacccgcc tggtcctcag tgactgtgcc 550
accagccatg ggagcctgcg catccaactg ctgtataagc tctccttcct 600
ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtgc ccattccctgc 650
ccaatctagt gaaaaaccag ctgtgtcccg tgatcgaggc ttccttcaat 700
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ccattcagct ctacctgggg gccaaagttgt tggactcaca gggaaagggtg 850
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atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350
cactgagatc atccactcca tcctgctgcc gaaccagaat ggcaaattaa 1400
gatctggggg cccagtgtca ttggtgaagg ccttgggatt cgaggcagct 1450

gagtcctcac tgaccaagga tgcccttggtg cttactccag cctccttggtg 1500
 gaaacccagc tctcctgtct cccagtgaag acttggtgag cagccatcag 1550
 ggaaggctgg gtcccagctg ggagtatggg tgtgagctct atagaccatc 1600
 cctctctgca atcaataaac acttgcctgt gaaaaa 1636

<210> 128
 <211> 484
 <212> PRT
 <213> Homo sapiens

<400> 128
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 Ala Thr Leu Ile Gln Ala Thr Leu Ser Pro Thr Ala Val Leu Ile
 20 25 30
 Leu Gly Pro Lys Val Ile Lys Glu Lys Leu Thr Gln Glu Leu Lys
 35 40 45
 Asp His Asn Ala Thr Ser Ile Leu Gln Gln Leu Pro Leu Leu Ser
 50 55 60
 Ala Met Arg Glu Lys Pro Ala Gly Gly Ile Pro Val Leu Gly Ser
 65 70 75
 Leu Val Asn Thr Val Leu Lys His Ile Ile Trp Leu Lys Val Ile
 80 85 90
 Thr Ala Asn Ile Leu Gln Leu Gln Val Lys Pro Ser Ala Asn Asp
 95 100 105
 Gln Glu Leu Leu Val Lys Ile Pro Leu Asp Met Val Ala Gly Phe
 110 115 120
 Asn Thr Pro Leu Val Lys Thr Ile Val Glu Phe His Met Thr Thr
 125 130 135
 Glu Ala Gln Ala Thr Ile Arg Met Asp Thr Ser Ala Ser Gly Pro
 140 145 150
 Thr Arg Leu Val Leu Ser Asp Cys Ala Thr Ser His Gly Ser Leu
 155 160 165
 Arg Ile Gln Leu Leu Tyr Lys Leu Ser Phe Leu Val Asn Ala Leu
 170 175 180
 Ala Lys Gln Val Met Asn Leu Leu Val Pro Ser Leu Pro Asn Leu
 185 190 195
 Val Lys Asn Gln Leu Cys Pro Val Ile Glu Ala Ser Phe Asn Gly
 200 205 210
 Met Tyr Ala Asp Leu Leu Gln Leu Val Lys Val Pro Ile Ser Leu
 215 220 225

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Ile | Asp | Arg | Leu | Glu | Phe | Asp | Leu | Leu | Tyr | Pro | Ala | Ile | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Asp | Thr | Ile | Gln | Leu | Tyr | Leu | Gly | Ala | Lys | Leu | Leu | Asp | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gln | Gly | Lys | Val | Thr | Lys | Trp | Phe | Asn | Asn | Ser | Ala | Ala | Ser | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Met | Pro | Thr | Leu | Asp | Asn | Ile | Pro | Phe | Ser | Leu | Ile | Val | Ser | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Asp | Val | Val | Lys | Ala | Ala | Val | Ala | Ala | Val | Leu | Ser | Pro | Glu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Phe | Met | Val | Leu | Leu | Asp | Ser | Val | Leu | Pro | Glu | Ser | Ala | His | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Arg | Leu | Lys | Ser | Ser | Ile | Gly | Leu | Ile | Asn | Glu | Lys | Ala | Ala | Asp | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Lys | Leu | Gly | Ser | Thr | Gln | Ile | Val | Lys | Ile | Leu | Thr | Gln | Asp | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Glu | Phe | Phe | Ile | Asp | Gln | Gly | His | Ala | Lys | Val | Ala | Gln | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Ile | Val | Leu | Glu | Val | Phe | Pro | Ser | Ser | Glu | Ala | Leu | Arg | Pro | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Phe | Thr | Leu | Gly | Ile | Glu | Ala | Ser | Ser | Glu | Ala | Gln | Phe | Tyr | Thr | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Lys | Gly | Asp | Gln | Leu | Ile | Leu | Asn | Leu | Asn | Asn | Ile | Ser | Ser | Asp | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Ile | Gln | Leu | Met | Asn | Ser | Gly | Ile | Gly | Trp | Phe | Gln | Pro | Asp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Val | Leu | Lys | Asn | Ile | Ile | Thr | Glu | Ile | Ile | His | Ser | Ile | Leu | Leu | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Pro | Asn | Gln | Asn | Gly | Lys | Leu | Arg | Ser | Gly | Val | Pro | Val | Ser | Leu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Val | Lys | Ala | Leu | Gly | Phe | Glu | Ala | Ala | Glu | Ser | Ser | Leu | Thr | Lys | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Asp | Ala | Leu | Val | Leu | Thr | Pro | Ala | Ser | Leu | Trp | Lys | Pro | Ser | Ser | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Pro | Val | Ser | Gln | | | | | | | | | | | | |

<210> 129

<211> 2213

<212> DNA

<213> Homo sapiens

<400> 129

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aaagaaggag atggtgttat ctgaaaaggt tagtcagctg atggaatgga 150
ctaacaaaag acctgtaata agaatgaatg gagacaagtt ccgtogcctt 200
gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcaactgctct 250
ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300
agatcctggc aaactcctgg cgatactcca gtgcattcac caacaggata 350
ttttttgcca tgggtggattt tgatgaaggc tctgatgtat ttcagatgct 400
aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaac 450
ccaaacgggg tgatacatat gagttacagg tgcggggttt ttcagctgag 500
cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550
tagacccccca aattatgctg gtccccttat gttgggattg cttttggctg 600
ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctcttt 650
aataaaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700
atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750
atccccacac gggacatgtg aattatatcc atggaagcag tcaagcccag 800
tttgtagctg aaacacacat tgttcttctg tttaatggtg gagttacctt 850
aggaatggtg cttttatgtg aagctgctac ctctgacatg gatattggaa 900
agcgaaagat aatgtgtgtg gctggtattg gacttgttgt attattcttc 950
agttggatgc tctctatttt tagatctaaa tatcatggct acccatacag 1000
ctttctgatg agttaaaaag gtcccagaga tatatagaca ctggagtact 1050
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gtatatatttg tattacctct ttttttcaag tgatttaaatt agttaatcat 1150
ttaaccaaag aagatgtgta gtgccttaac aagcaatcct ctgtcaaaat 1200
ctgaggtatt tgaaaataat tatcctctta accttctctt cccagtgaac 1250
tttatggaac atttaattta gtacaattaa gtatattata aaaattgtaa 1300
aactactact ttgttttagt tagaaciaag ctcaaaacta ctttagtta 1350
cttggtcatc tgattttata ttgccttata caaagatggg gaaagtaagt 1400
cctgaccagg tgttcccaca tatgcctgtt acagataact acattaggaa 1450

ttcatcttta gcttcttcat ctttgtgtgg atgtgtatac tttacgcac 1500
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 gaacaccatt cttcagagca cacgtctagc cctcagcaag acagttgttt 1600
 ctctctctcc ttgcatatit cctactgcgc tccagcctga gtgatagagt 1650
 gagactctgt ctcaaaaaaa agtatctcta aatacaggat tataattttct 1700
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 tccatctcct tagttttctt ttaaggtgac ccatctgtga taaaaatata 1800
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 aaattagagt ttgtcactta ttccatttgt acctaagaga aaaataggct 1900
 cagttagaaa aggactccct ggccaggcgc agtgacttac gcctgtaatc 1950
 tcagcacttt gggaggccaa ggcaggcaga tcacgaggtc aggagtccga 2000
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 tgaggcacga gaatcacttg aactcaggag atggagggtt cagtgaagccg 2150
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 aaaaaaaaaa aaa 2213

<210> 130

<211> 335

<212> PRT

<213> Homo sapiens

<400> 130

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Arg | Trp | Arg | Phe | Trp | Cys | Val | Ser | Val | Thr | Met | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ala | Leu | Leu | Ile | Val | Cys | Asp | Val | Pro | Ser | Ala | Ser | Ala | Gln |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Lys | Glu | Met | Val | Leu | Ser | Glu | Lys | Val | Ser | Gln | Leu | Met |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Trp | Thr | Asn | Lys | Arg | Pro | Val | Ile | Arg | Met | Asn | Gly | Asp | Lys |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Arg | Arg | Leu | Val | Lys | Ala | Pro | Pro | Arg | Asn | Tyr | Ser | Val | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Met | Phe | Thr | Ala | Leu | Gln | Leu | His | Arg | Gln | Cys | Val | Val | Cys |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gln | Ala | Asp | Glu | Glu | Phe | Gln | Ile | Leu | Ala | Asn | Ser | Trp | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ser | Ser | Ala | Phe | Thr | Asn | Arg | Ile | Phe | Phe | Ala | Met | Val | Asp | 110 | 115 | 120 |
| Phe | Asp | Glu | Gly | Ser | Asp | Val | Phe | Gln | Met | Leu | Asn | Met | Asn | Ser | 125 | 130 | 135 |
| Ala | Pro | Thr | Phe | Ile | Asn | Phe | Pro | Ala | Lys | Gly | Lys | Pro | Lys | Arg | 140 | 145 | 150 |
| Gly | Asp | Thr | Tyr | Glu | Leu | Gln | Val | Arg | Gly | Phe | Ser | Ala | Glu | Gln | 155 | 160 | 165 |
| Ile | Ala | Arg | Trp | Ile | Ala | Asp | Arg | Thr | Asp | Val | Asn | Ile | Arg | Val | 170 | 175 | 180 |
| Ile | Arg | Pro | Pro | Asn | Tyr | Ala | Gly | Pro | Leu | Met | Leu | Gly | Leu | Leu | 185 | 190 | 195 |
| Leu | Ala | Val | Ile | Gly | Gly | Leu | Val | Tyr | Leu | Arg | Arg | Ser | Asn | Met | 200 | 205 | 210 |
| Glu | Phe | Leu | Phe | Asn | Lys | Thr | Gly | Trp | Ala | Phe | Ala | Ala | Leu | Cys | 215 | 220 | 225 |
| Phe | Val | Leu | Ala | Met | Thr | Ser | Gly | Gln | Met | Trp | Asn | His | Ile | Arg | 230 | 235 | 240 |
| Gly | Pro | Pro | Tyr | Ala | His | Lys | Asn | Pro | His | Thr | Gly | His | Val | Asn | 245 | 250 | 255 |
| Tyr | Ile | His | Gly | Ser | Ser | Gln | Ala | Gln | Phe | Val | Ala | Glu | Thr | His | 260 | 265 | 270 |
| Ile | Val | Leu | Leu | Phe | Asn | Gly | Gly | Val | Thr | Leu | Gly | Met | Val | Leu | 275 | 280 | 285 |
| Leu | Cys | Glu | Ala | Ala | Thr | Ser | Asp | Met | Asp | Ile | Gly | Lys | Arg | Lys | 290 | 295 | 300 |
| Ile | Met | Cys | Val | Ala | Gly | Ile | Gly | Leu | Val | Val | Leu | Phe | Phe | Ser | 305 | 310 | 315 |
| Trp | Met | Leu | Ser | Ile | Phe | Arg | Ser | Lys | Tyr | His | Gly | Tyr | Pro | Tyr | 320 | 325 | 330 |
| Ser | Phe | Leu | Met | Ser | | | | | | | | | | | 335 | | |

<210> 131

<211> 2476

<212> DNA

<213> Homo sapiens

<400> 131

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cagccaaagc gcccaatgtg gtgctggctg tgagcgactc cttcgatgga 250
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ccctaccatg cttgatattg ctggaattcc tctgcctcag aacctgagt 1250
gatactcttt gttgccgtta tcatcagaaa catttaagaa tgaacataaa 1300
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tgtgaatgcc tccacctaca tgcttcgaac taaccactgg aaatatatag 1400
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ttctttggat cagaagcttc attccattat aaactaccct aaagtttctg 1550

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 ataggacaga attattcaaa cggttatagca aatcttaggt ggcaccaaga 1650
 ctggcagaag gaaccaagga agtatgaaaa tgcaattgat cagtggctta 1700
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 atgaaacagt ttttaataatt accaagtttt ggccggggcac agtggctcac 1850
 acctgtaatc ccaggacttt gggaggctga ggaaagcaga tcacaaggtc 1900
 aagagattga gaccatcctg gccaacatgg tgaaaccctg tctctactaa 1950
 aaatacaaaa attagctggg cgcgggtggtg cacacctata gtctcagcta 2000
 ctgagaggct gaggcaggag gatcgcttga acccgggagg cagcagttgc 2050
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<210> 132

<211> 536

<212> PRT

<213> Homo sapiens

<400> 132

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Leu | Trp | Val | Ser | Val | Val | Ala | Ala | Leu | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ala | Pro | Gly | Ala | Gly | Glu | Gln | Arg | Arg | Arg | Ala | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Asn | Val | Val | Leu | Val | Val | Ser | Asp | Ser | Phe | Asp | Gly | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Phe | His | Pro | Gly | Ser | Gln | Val | Val | Lys | Leu | Pro | Phe | Ile |
| | | | | 50 | | | | | | 55 | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Phe | Met | Lys | Thr | Arg | Gly | Thr | Ser | Phe | Leu | Asn | Ala | Tyr | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ser | Pro | Ile | Cys | Cys | Pro | Ser | Arg | Ala | Ala | Met | Trp | Ser | Gly | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Phe | Thr | His | Leu | Thr | Glu | Ser | Trp | Asn | Asn | Phe | Lys | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Pro | Asn | Tyr | Thr | Thr | Trp | Met | Asp | Val | Met | Glu | Arg | His | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Tyr | Arg | Thr | Gln | Lys | Phe | Gly | Lys | Leu | Asp | Tyr | Thr | Ser | Gly | His | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Ser | Ile | Ser | Asn | Arg | Val | Glu | Ala | Trp | Thr | Arg | Asp | Val | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Leu | Leu | Arg | Gln | Glu | Gly | Arg | Pro | Met | Val | Asn | Leu | Ile | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asn | Arg | Thr | Lys | Val | Arg | Val | Met | Glu | Arg | Asp | Trp | Gln | Asn | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Lys | Ala | Val | Asn | Trp | Leu | Arg | Lys | Glu | Ala | Ile | Asn | Tyr | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Phe | Val | Ile | Tyr | Leu | Gly | Leu | Asn | Leu | Pro | His | Pro | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Ser | Pro | Ser | Ser | Gly | Glu | Asn | Phe | Gly | Ser | Ser | Thr | Phe | His | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Ser | Leu | Tyr | Trp | Leu | Glu | Lys | Val | Ser | His | Asp | Ala | Ile | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Pro | Lys | Trp | Ser | Pro | Leu | Ser | Glu | Met | His | Pro | Val | Asp | Tyr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Ser | Ser | Tyr | Thr | Lys | Asn | Cys | Thr | Gly | Arg | Phe | Thr | Lys | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Ile | Lys | Asn | Ile | Arg | Ala | Phe | Tyr | Tyr | Ala | Met | Cys | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Asp | Ala | Met | Leu | Gly | Glu | Ile | Ile | Leu | Ala | Leu | His | Gln | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Leu | Leu | Gln | Lys | Thr | Ile | Val | Ile | Tyr | Ser | Ser | Asp | His | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Leu | Ala | Met | Glu | His | Arg | Gln | Phe | Tyr | Lys | Met | Ser | Met | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Ser | Ala | His | Val | Pro | Leu | Leu | Met | Met | Gly | Pro | Gly | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Lys | Ala | Gly | Leu | Gln | Val | Ser | Asn | Val | Val | Ser | Leu | Val | Asp | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Pro | Thr | Met | Leu | Asp | Ile | Ala | Gly | Ile | Pro | Leu | Pro | Gln | Asn | |

| | | |
|-------------------------------------|-------------------------|-----|
| 365 | 370 | 375 |
| Leu Ser Gly Tyr Ser Leu Leu Pro Leu | Ser Ser Glu Thr Phe Lys | |
| 380 | 385 | 390 |
| Asn Glu His Lys Val Lys Asn Leu His | Pro Pro Trp Ile Leu Ser | |
| 395 | 400 | 405 |
| Glu Phe His Gly Cys Asn Val Asn Ala | Ser Thr Tyr Met Leu Arg | |
| 410 | 415 | 420 |
| Thr Asn His Trp Lys Tyr Ile Ala Tyr | Ser Asp Gly Ala Ser Ile | |
| 425 | 430 | 435 |
| Leu Pro Gln Leu Phe Asp Leu Ser Ser | Asp Pro Asp Glu Leu Thr | |
| 440 | 445 | 450 |
| Asn Val Ala Val Lys Phe Pro Glu Ile | Thr Tyr Ser Leu Asp Gln | |
| 455 | 460 | 465 |
| Lys Leu His Ser Ile Ile Asn Tyr Pro | Lys Val Ser Ala Ser Val | |
| 470 | 475 | 480 |
| His Gln Tyr Asn Lys Glu Gln Phe Ile | Lys Trp Lys Gln Ser Ile | |
| 485 | 490 | 495 |
| Gly Gln Asn Tyr Ser Asn Val Ile Ala | Asn Leu Arg Trp His Gln | |
| 500 | 505 | 510 |
| Asp Trp Gln Lys Glu Pro Arg Lys Tyr | Glu Asn Ala Ile Asp Gln | |
| 515 | 520 | 525 |
| Trp Leu Lys Thr His Met Asn Pro Arg | Ala Val | |
| 530 | 535 | |

<210> 133

<211> 1475

<212> DNA

<213> Homo sapiens

<400> 133

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gcttctactg agaggtctgc catggcctct cttggcctcc aacttgtggg 150

ctacatccta ggccttctgg ggcttttggg cacactgggt gccatgctgc 200

tccccagctg gaaaacaagt tcttatgtcg gtgccagcat tgtgacagca 250

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catcaccag tgtgacatct atagcaccct tctgggctg cccgctgaca 350

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gcctgcatta tctctgtggt gggcatgaga tgcacagtct tctgccagga 450

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cctccaaaga aactgattgg cctggaacc tccatcccac tottgttatg 1350
actccacagt gtccagacta atttgtgcat gaactgaaat aaaaccatcc 1400
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gcagcctggg acatttaaaa aaata 1475

<210> 134

<211> 230

<212> PRT

<213> Homo sapiens

<400> 134

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Leu | Gly | Leu | Gln | Leu | Val | Gly | Tyr | Ile | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Leu | Leu | Gly | Thr | Leu | Val | Ala | Met | Leu | Leu | Pro | Ser | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Thr | Ser | Ser | Tyr | Val | Gly | Ala | Ser | Ile | Val | Thr | Ala | Val | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Lys | Gly | Leu | Trp | Met | Glu | Cys | Ala | Thr | His | Ser | Thr | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 50 | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Thr | Gln | Cys | Asp | Ile | Tyr | Ser | Thr | Leu | Leu | Gly | Leu | Pro | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Ile | Gln | Ala | Ala | Gln | Ala | Met | Met | Val | Thr | Ser | Ser | Ala | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ser | Leu | Ala | Cys | Ile | Ile | Ser | Val | Val | Gly | Met | Arg | Cys | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Phe | Cys | Gln | Glu | Ser | Arg | Ala | Lys | Asp | Arg | Val | Ala | Val | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Gly | Val | Phe | Phe | Ile | Leu | Gly | Gly | Leu | Leu | Gly | Phe | Ile | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Ala | Trp | Asn | Leu | His | Gly | Ile | Leu | Arg | Asp | Phe | Tyr | Ser | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Val | Pro | Asp | Ser | Met | Lys | Phe | Glu | Ile | Gly | Glu | Ala | Leu | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gly | Ile | Ile | Ser | Ser | Leu | Phe | Ser | Leu | Ile | Ala | Gly | Ile | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Cys | Phe | Ser | Cys | Ser | Ser | Gln | Arg | Asn | Arg | Ser | Asn | Tyr | Tyr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asp | Ala | Tyr | Gln | Ala | Gln | Pro | Leu | Ala | Thr | Arg | Ser | Ser | Pro | Arg |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Gly | Gln | Pro | Pro | Lys | Val | Lys | Ser | Glu | Phe | Asn | Ser | Tyr | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Thr | Gly | Tyr | Val | | | | | | | | | | |
| | | | | 230 | | | | | | | | | | |

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<211> 610

<212> DNA

<213> Homo sapiens

<400> 135

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aggtgtggag acaagatcta caacccttg gagcagtgt gttacaatga 200

cgccatcgtg tccctgagcg agaccgcca atgtgggtccc ccctgcacct 250

tctggccctg ctttgagctc tgctgtcttg attcctttgg cctcaciaaac 300

gattttgttg tgaagctgaa gggtcagggg gtgaattccc agtgccactc 350

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 aggtaatatg tgtaccagta gagaagcctg aggaatttac aaaatgatgc 500
 agctccaagc cattgtatgg cccatgtggg agactgatgg gacatggaga 550
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 acctgtaaaa 610

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 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 136
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 20 25 30
 Pro Trp Leu Cys Gln Pro Ala Pro Arg Cys Gly Asp Lys Ile Tyr
 35 40 45
 Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu
 50 55 60
 Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys
 65 70 75
 Phe Glu Leu Cys Cys Leu Asp Ser Phe Gly Leu Thr Asn Asp Phe
 80 85 90
 Val Val Lys Leu Lys Val Gln Gly Val Asn Ser Gln Cys His Ser
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 Ser Pro Ile Ser Ser Lys Cys Glu Ser Arg Arg Arg Phe Pro
 110 115

<210> 137
 <211> 771
 <212> DNA
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<400> 137
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 gtcgtgccct tggccaggac ccagacgtgt ggaaactgca ccttcagagt 250

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 tgggcctgga gaaagaggct ggtgttacct gagatctggg atgctgagtg 450
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 ccttctagaa ttctggacag catgagatgc gtgtgctgat gggggcccag 600
 ggactctgaa ccctcctgat gaccctatg gccaacatca acccggcacc 650
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<210> 138

<211> 110

<212> PRT

<213> Homo sapiens

<400> 138

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Arg | Gly | Cys | Ile | Val | Ala | Val | Phe | Ala | Ile | Phe | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Ser | Arg | Leu | Leu | Cys | Ser | His | Gly | Ala | Pro | Val | Ala | Pro | Met |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Thr | Pro | Tyr | Leu | Met | Leu | Cys | Gln | Pro | His | Lys | Arg | Cys | Gly | Asp |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Lys | Phe | Tyr | Asp | Pro | Leu | Gln | His | Cys | Cys | Tyr | Asp | Asp | Ala | Val |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Val | Pro | Leu | Ala | Arg | Thr | Gln | Thr | Cys | Gly | Asn | Cys | Thr | Phe | Arg |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Val | Cys | Phe | Glu | Gln | Cys | Cys | Pro | Trp | Thr | Phe | Met | Val | Lys | Leu |
| | | | 80 | | | | | 85 | | | | | | 90 |
| Ile | Asn | Gln | Asn | Cys | Asp | Ser | Ala | Arg | Thr | Ser | Asp | Asp | Arg | Leu |
| | | | 95 | | | | | 100 | | | | | | 105 |
| Cys | Arg | Ser | Val | Ser | | | | | | | | | | |
| | | | 110 | | | | | | | | | | | |

<210> 139

<211> 2044

<212> DNA

<213> Homo sapiens

<400> 139

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<210> 140

<211> 311

<212> PRT

<213> Homo sapiens

<400> 140

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Val | Pro | Thr | Ala | Leu | Glu | Ala | Gly | Ser | Trp | Arg | Trp | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Leu | Phe | Ala | Leu | Phe | Leu | Ala | Ala | Ser | Leu | Gly | Pro | Val |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Phe | Lys | Val | Ala | Thr | Pro | Tyr | Ser | Leu | Tyr | Val | Cys | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Gln | Asn | Val | Thr | Leu | Thr | Cys | Arg | Leu | Leu | Gly | Pro | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Gly | His | Asp | Val | Thr | Phe | Tyr | Lys | Thr | Trp | Tyr | Arg | Ser |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Gly | Glu | Val | Gln | Thr | Cys | Ser | Glu | Arg | Arg | Pro | Ile | Arg |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Thr | Phe | Gln | Asp | Leu | His | Leu | His | His | Gly | Gly | His | Gln |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Asn | Thr | Ser | His | Asp | Leu | Ala | Gln | Arg | His | Gly | Leu | Glu |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Ser | Asp | His | His | Gly | Asn | Phe | Ser | Ile | Thr | Met | Arg | Asn |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Leu | Leu | Asp | Ser | Gly | Leu | Tyr | Cys | Cys | Leu | Val | Val | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | |
|-------------------------------------|-------------------------|--|-----|--|-----|
| | 140 | | 145 | | 150 |
| Ile Arg His His His Ser Glu His Arg | Val His Gly Ala Met Glu | | | | |
| | 155 | | 160 | | 165 |
| Leu Gln Val Gln Thr Gly Lys Asp Ala | Pro Ser Asn Cys Val Val | | | | |
| | 170 | | 175 | | 180 |
| Tyr Pro Ser Ser Ser Gln Asp Ser Glu | Asn Ile Thr Ala Ala Ala | | | | |
| | 185 | | 190 | | 195 |
| Leu Ala Thr Gly Ala Cys Ile Val Gly | Ile Leu Cys Leu Pro Leu | | | | |
| | 200 | | 205 | | 210 |
| Ile Leu Leu Leu Val Tyr Lys Gln Arg | Gln Ala Ala Ser Asn Arg | | | | |
| | 215 | | 220 | | 225 |
| Arg Ala Gln Glu Leu Val Arg Met Asp | Ser Asn Ile Gln Gly Ile | | | | |
| | 230 | | 235 | | 240 |
| Glu Asn Pro Gly Phe Glu Ala Ser Pro | Pro Ala Gln Gly Ile Pro | | | | |
| | 245 | | 250 | | 255 |
| Glu Ala Lys Val Arg His Pro Leu Ser | Tyr Val Ala Gln Arg Gln | | | | |
| | 260 | | 265 | | 270 |
| Pro Ser Glu Ser Gly Arg His Leu Leu | Ser Glu Pro Ser Thr Pro | | | | |
| | 275 | | 280 | | 285 |
| Leu Ser Pro Pro Gly Pro Gly Asp Val | Phe Phe Pro Ser Leu Asp | | | | |
| | 290 | | 295 | | 300 |
| Pro Val Pro Asp Ser Pro Asn Phe Glu | Val Ile | | | | |
| | 305 | | 310 | | |

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 <211> 1732
 <212> DNA
 <213> Homo sapiens

<400> 141
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 cttagacctc ccttctgcc ctcttttctt gccaccgct gcttcttggc 150
 ccttctccga ccccgctcta gcagcagacc tcctgggggc tgtgggttga 200
 tctgtggccc ctgtgcctcc gtgtcctttt cgtctccctt cctcccgact 250
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 gaggtcctc tcctccttgc tgggactcgc gctgctctgg ttccccctgg 350
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 agatactccc ccggcgagag ctggcacccc tacttgagc cacaaggcct 450

gatgtactgc ctgcgctgta cctgctcaga gggcgcccat gtgagttgtt 500
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cagcaatgct gtcccaagtg tgtggaacct cacactccct ctggactccg 600
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cagtcgctcc atgggggtgag acatccctcag gatccatgtt ccagtgatgc 900
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aagacttcca gaaagaggca cagcacttcc gactgctcgc tggccccac 1550
gaaggtcact ggaacgtctt cctagcccag accctggagc tgaaggtcac 1600
ggccagtcca gacaaagtga ccaagacata acaaagacct aacagttgca 1650
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<210> 142
<211> 451
<212> PRT
<213> Homo sapiens
<400> 142

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Val | Pro | Glu | Val | Arg | Val | Leu | Ser | Ser | Leu | Leu | Gly | Leu | Ala | 1 | 5 | 10 | 15 |
| Leu | Leu | Trp | Phe | Pro | Leu | Asp | Ser | His | Ala | Arg | Ala | Arg | Pro | Asp | 20 | 25 | 30 | |
| Met | Phe | Cys | Leu | Phe | His | Gly | Lys | Arg | Tyr | Ser | Pro | Gly | Glu | Ser | 35 | 40 | 45 | |
| Trp | His | Pro | Tyr | Leu | Glu | Pro | Gln | Gly | Leu | Met | Tyr | Cys | Leu | Arg | 50 | 55 | 60 | |
| Cys | Thr | Cys | Ser | Glu | Gly | Ala | His | Val | Ser | Cys | Tyr | Arg | Leu | His | 65 | 70 | 75 | |
| Cys | Pro | Pro | Val | His | Cys | Pro | Gln | Pro | Val | Thr | Glu | Pro | Gln | Gln | 80 | 85 | 90 | |
| Cys | Cys | Pro | Lys | Cys | Val | Glu | Pro | His | Thr | Pro | Ser | Gly | Leu | Arg | 95 | 100 | 105 | |
| Ala | Pro | Pro | Lys | Ser | Cys | Gln | His | Asn | Gly | Thr | Met | Tyr | Gln | His | 110 | 115 | 120 | |
| Gly | Glu | Ile | Phe | Ser | Ala | His | Glu | Leu | Phe | Pro | Ser | Arg | Leu | Pro | 125 | 130 | 135 | |
| Asn | Gln | Cys | Val | Leu | Cys | Ser | Cys | Thr | Glu | Gly | Gln | Ile | Tyr | Cys | 140 | 145 | 150 | |
| Gly | Leu | Thr | Thr | Cys | Pro | Glu | Pro | Gly | Cys | Pro | Ala | Pro | Leu | Pro | 155 | 160 | 165 | |
| Leu | Pro | Asp | Ser | Cys | Cys | Gln | Ala | Cys | Lys | Asp | Glu | Ala | Ser | Glu | 170 | 175 | 180 | |
| Gln | Ser | Asp | Glu | Glu | Asp | Ser | Val | Gln | Ser | Leu | His | Gly | Val | Arg | 185 | 190 | 195 | |
| His | Pro | Gln | Asp | Pro | Cys | Ser | Ser | Asp | Ala | Gly | Arg | Lys | Arg | Gly | 200 | 205 | 210 | |
| Pro | Gly | Thr | Pro | Ala | Pro | Thr | Gly | Leu | Ser | Ala | Pro | Leu | Ser | Phe | 215 | 220 | 225 | |
| Ile | Pro | Arg | His | Phe | Arg | Pro | Lys | Gly | Ala | Gly | Ser | Thr | Thr | Val | 230 | 235 | 240 | |
| Lys | Ile | Val | Leu | Lys | Glu | Lys | His | Lys | Lys | Ala | Cys | Val | His | Gly | 245 | 250 | 255 | |
| Gly | Lys | Thr | Tyr | Ser | His | Gly | Glu | Val | Trp | His | Pro | Ala | Phe | Arg | 260 | 265 | 270 | |
| Ala | Phe | Gly | Pro | Leu | Pro | Cys | Ile | Leu | Cys | Thr | Cys | Glu | Asp | Gly | 275 | 280 | 285 | |
| Arg | Gln | Asp | Cys | Gln | Arg | Val | Thr | Cys | Pro | Thr | Glu | Tyr | Pro | Cys | | | | |

| 290 | 295 | 300 |
|---|-----|-----|
| Arg His Pro Glu Lys Val Ala Gly Lys Cys Cys Lys Ile Cys Pro | 305 | 315 |
| Glu Asp Lys Ala Asp Pro Gly His Ser Glu Ile Ser Ser Thr Arg | 320 | 330 |
| Cys Pro Lys Ala Pro Gly Arg Val Leu Val His Thr Ser Val Ser | 335 | 345 |
| Pro Ser Pro Asp Asn Leu Arg Arg Phe Ala Leu Glu His Glu Ala | 350 | 360 |
| Ser Asp Leu Val Glu Ile Tyr Leu Trp Lys Leu Val Lys Asp Glu | 365 | 375 |
| Glu Thr Glu Ala Gln Arg Gly Glu Val Pro Gly Pro Arg Pro His | 380 | 390 |
| Ser Gln Asn Leu Pro Leu Asp Ser Asp Gln Glu Ser Gln Glu Ala | 395 | 405 |
| Arg Leu Pro Glu Arg Gly Thr Ala Leu Pro Thr Ala Arg Trp Pro | 410 | 420 |
| Pro Arg Arg Ser Leu Glu Arg Leu Pro Ser Pro Asp Pro Gly Ala | 425 | 435 |
| Glu Gly His Gly Gln Ser Arg Gln Ser Asp Gln Asp Ile Thr Lys | 440 | 450 |
| Thr | | |

<210> 143
 <211> 693
 <212> DNA
 <213> Homo sapiens

<400> 143
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 tgggctacgc gctcctcggt atcgtgaccc cgggagagcg gcggaagcag 200
 gaaatgctaa aggagatgcc actgcaggac ccaaggagca gggaggaggc 250
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 ggcgccagcg ggaggtcacc gtgagaccgg acttgccctcc gtgggcgccg 400
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 gtgagctgcc gtcgggtgag cacgtttccc ccaaaccctg gactgactgc 550
 ttttaaggctcc gcaaggcggg ccagggccga gacgcgagtc ggatgtggtg 600
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 693

<210> 144
 <211> 93
 <212> PRT
 <213> Homo sapiens

<400> 144
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 Gly Glu Arg Arg Lys Gln Glu Met Leu Lys Glu Met Pro Leu Gln
 35 40 45
 Asp Pro Arg Ser Arg Glu Glu Ala Ala Arg Thr Gln Gln Leu Leu
 50 55 60
 Leu Ala Thr Leu Gln Glu Ala Ala Thr Thr Gln Glu Asn Val Ala
 65 70 75
 Trp Arg Lys Asn Trp Met Val Gly Gly Glu Gly Gly Ala Ser Gly
 80 85 90
 Arg Ser Pro

<210> 145
 <211> 1883
 <212> DNA
 <213> Homo sapiens

<400> 145
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 atggtcggga cccctccaag gacagcagca ccaccttggt gagtacctgg 200
 aacgccgact agctgcttta gaggaacggc tggcccagtg ccaggaccag 250
 agtagtcggc atgctgctga gctgcgggac ttcaagaaca agatgctgcc 300
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gagacccaga acccagctct gccctgtgta gagtttgatg agaaggtgac 450
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tggtgacaga ctgtggctac acaatctctc aagtgagatc aatgaagatt 550
ctgaagcgat ttggtggccc agctggtcta tggaccaagg atccactggg 600
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gaaaatccac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1850

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1883

<210> 146

<211> 406

<212> PRT

<213> Homo sapiens

<400> 146

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Ser Gly Pro Leu Gln Gly Gln Gln His His Leu Val Glu Tyr Met
20 25 30

Glu Arg Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln
35 40 45

Asp Gln Ser Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn
50 55 60

Lys Met Leu Pro Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala
65 70 75

Leu Arg Thr Glu Ala Asp Thr Ile Ser Gly Arg Val Asp Arg Leu
80 85 90

Glu Arg Glu Val Asp Tyr Leu Glu Thr Gln Asn Pro Ala Leu Pro
95 100 105

Cys Val Glu Phe Asp Glu Lys Val Thr Gly Gly Pro Gly Thr Lys
110 115 120

Gly Lys Gly Arg Arg Asn Glu Lys Tyr Asp Met Val Thr Asp Cys
125 130 135

Gly Tyr Thr Ile Ser Gln Val Arg Ser Met Lys Ile Leu Lys Arg
140 145 150

Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys Asp Pro Leu Gly Gln
155 160 165

Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln Asn Asp Thr Ala
170 175 180

Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala Met Ala Ala
185 190 195

Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val Gly Thr
200 205 210

Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg Pro
215 220 225

Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
230 235 240

Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser
245 250 255

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Phe | Pro | Ala | Glu | Gly | Leu | Ile | Pro | Pro | Tyr | Gly | Leu | Thr | Ala | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asp | Thr | Tyr | Ile | Asp | Leu | Val | Ala | Asp | Glu | Glu | Gly | Leu | Trp | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Val | Tyr | Ala | Thr | Arg | Glu | Asp | Asp | Arg | His | Leu | Cys | Leu | Ala | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Asp | Pro | Gln | Thr | Leu | Asp | Thr | Glu | Gln | Gln | Trp | Asp | Thr | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Cys | Pro | Arg | Glu | Asn | Ala | Glu | Ala | Ala | Phe | Val | Ile | Cys | Gly | Thr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Tyr | Val | Val | Tyr | Asn | Thr | Arg | Pro | Ala | Ser | Arg | Ala | Arg | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gln | Cys | Ser | Phe | Asp | Ala | Ser | Gly | Thr | Leu | Thr | Pro | Glu | Arg | Ala | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Ala | Leu | Pro | Tyr | Phe | Pro | Arg | Arg | Tyr | Gly | Ala | His | Ala | Ser | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Arg | Tyr | Asn | Pro | Arg | Glu | Arg | Gln | Leu | Tyr | Ala | Trp | Asp | Asp | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Tyr | Gln | Ile | Val | Tyr | Lys | Leu | Glu | Met | Arg | Lys | Lys | Glu | Glu | Glu | |
| | | | | 395 | | | | | 400 | | | | | 405 | |

Val

<210> 147
 <211> 2052
 <212> DNA
 <213> Homo sapiens

<400> 147
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 gttctcctct tctctctaat ccatcogtca cctctcctgt catccgtttc 150
 catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200
 ttggttctga gtctcctcaa gctgggatca gggcagtggc aggtgttttg 250
 gccagacaag cctgtccagg ccttggtggg ggaggacgca gcattctcct 300
 gtttcctgtc tcctaagacc aatgcagagg ccatggaagt gcggttcttc 350
 aggggccagt tctctagcgt ggtccacctc tacagggacg ggaaggacca 400
 gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450
 attctattgc ggaggggcgc atctctctga ggctggaaaa cattactgtg 500

ttggatgctg gcctctatgg gtgcaggatt agttcccagt cttactacca 550
 gaaggccatc tgggagctac aggtgtcagc actggggtca gttcctctca 600
 tttccatcac gggatatgtt gatagagaca tccagctact ctgtcagtcc 650
 tcgggctggt tccccggcc cacagcgaag tggaaaggtc cacaaggaca 700
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 ccacctctca ggtgaagaac cgtcaggaat tcccatctca caggctgtgg 1950

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acagagtgta tcctaatggt ttgttcatta tattacactt tcagtaaaaa 2050
aa 2052

<210> 148
<211> 500
<212> PRT
<213> Homo sapiens

<400> 148
Met Ala Leu Met Leu Ser Leu Val Leu Ser Leu Leu Lys Leu Gly
1 5 10 15
Ser Gly Gln Trp Gln Val Phe Gly Pro Asp Lys Pro Val Gln Ala
20 25 30
Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
35 40 45
Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
50 55 60
Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
65 70 75
Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
80 85 90
Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
95 100 105
Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
110 115 120
Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
125 130 135
Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
140 145 150
Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
155 160 165
Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
170 175 180
Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
185 190 195
Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
200 205 210
Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
215 220 225
Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Gly Ile Leu Cys | Cys Gly Leu Phe Phe | Gly Ile Val Gly Leu Lys | | | |
| | 245 | 250 | | | 255 |
| Ile Phe Phe Ser | Lys Phe Gln Trp Lys | Ile Gln Ala Glu Leu Asp | | | |
| | 260 | 265 | | | 270 |
| Trp Arg Arg Lys | His Gly Gln Ala Glu | Leu Arg Asp Ala Arg Lys | | | |
| | 275 | 280 | | | 285 |
| His Ala Val Glu | Val Thr Leu Asp Pro | Glu Thr Ala His Pro Lys | | | |
| | 290 | 295 | | | 300 |
| Leu Cys Val Ser | Asp Leu Lys Thr Val | Thr His Arg Lys Ala Pro | | | |
| | 305 | 310 | | | 315 |
| Gln Glu Val Pro | His Ser Glu Lys Arg | Phe Thr Arg Lys Ser Val | | | |
| | 320 | 325 | | | 330 |
| Val Ala Ser Gln | Ser Phe Gln Ala Gly | Lys His Tyr Trp Glu Val | | | |
| | 335 | 340 | | | 345 |
| Asp Gly Gly His | Asn Lys Arg Trp Arg | Val Gly Val Cys Arg Asp | | | |
| | 350 | 355 | | | 360 |
| Asp Val Asp Arg | Arg Lys Glu Tyr Val | Thr Leu Ser Pro Asp His | | | |
| | 365 | 370 | | | 375 |
| Gly Tyr Trp Val | Leu Arg Leu Asn Gly | Glu His Leu Tyr Phe Thr | | | |
| | 380 | 385 | | | 390 |
| Leu Asn Pro Arg | Phe Ile Ser Val Phe | Pro Arg Thr Pro Pro Thr | | | |
| | 395 | 400 | | | 405 |
| Lys Ile Gly Val | Phe Leu Asp Tyr Glu | Cys Gly Thr Ile Ser Phe | | | |
| | 410 | 415 | | | 420 |
| Phe Asn Ile Asn | Asp Gln Ser Leu Ile | Tyr Thr Leu Thr Cys Arg | | | |
| | 425 | 430 | | | 435 |
| Phe Glu Gly Leu | Leu Arg Pro Tyr Ile | Glu Tyr Pro Ser Tyr Asn | | | |
| | 440 | 445 | | | 450 |
| Glu Gln Asn Gly | Thr Pro Ile Val Ile | Cys Pro Val Thr Gln Glu | | | |
| | 455 | 460 | | | 465 |
| Ser Glu Lys Glu | Ala Ser Trp Gln Arg | Ala Ser Ala Ile Pro Glu | | | |
| | 470 | 475 | | | 480 |
| Thr Ser Asn Ser | Glu Ser Ser Ser Gln | Ala Thr Thr Pro Phe Leu | | | |
| | 485 | 490 | | | 495 |
| Pro Arg Gly Glu | Met | | | | |
| | 500 | | | | |

<210> 149

<211> 24

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 149
gcgtggtcca cctctacagg gacg 24

<210> 150
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 150
ggaactgacc cagtgtgac acc 23

<210> 151
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 151
gcagatgcca cagtatcaag gcaggacaaa actggtgaag gattc 45

<210> 152
<211> 2294
<212> DNA
<213> Homo sapiens

<400> 152
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ggtcggattg caacgaggag aagatgactg accaaccgac tggctgaatg 100
aatgaatggc ggagccgagc gcgccatgag gagcctgccg agcctgggcg 150
gcctcgccct gttgtgctgc gccgccgccg ccgccgccgt cgcctcagcc 200
gcctcggcgg ggaatgtcac cggcggcggc ggggccgcgg ggcaggtgga 250
cgcgtcgccg ggccccgggt tgcggggcga gccagccac cccttccta 300
gggcgacggc tcccacggcc caggccccga ggaccgggccc cccgcgcgcc 350
accgtccacc gacccctggc tgcgacttct ccagcccagt ccccgagac 400

caccctctt tgggcgactg ctggaccctc ttccaccacc tttcaggcgc 450
cgctcggccc ctgcgcgacc acccctccg cggcggaacg cacttcgacc 500
acctctcagg cgccgaccag acccgcgccg accacccttt cgaagaccac 550
tggcccgggc cgcaccaccc ctgtagcgac caccgtaccg gcgcccacga 600
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agaccacagg gcagtgtgag tgcggccag gttatcagg gcttactgt 800
gaaacctgca aagagggtt ttacctaaat tacacttctg ggctctgtca 850
gccatgtgac tgtagtcac atggagctct cagcataccg tgcaacagg 900
aagcaacaga ggggtggaact gaagtttatt ttatttttagc aagggaataa 950
aaaaggctgc tactctcaag gaccatactg gtttaaacaa aggaggatga 1000
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<210> 153
 <211> 258
 <212> PRT
 <213> Homo sapiens

<400> 153
 Met Arg Ser Leu Pro Ser Leu Gly Gly Leu Ala Leu Leu Cys Cys
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 20 25 30
 Val Thr Gly Gly Gly Gly Ala Ala Gly Gln Val Asp Ala Ser Pro
 35 40 45
 Gly Pro Gly Leu Arg Gly Glu Pro Ser His Pro Phe Pro Arg Ala
 50 55 60
 Thr Ala Pro Thr Ala Gln Ala Pro Arg Thr Gly Pro Pro Arg Ala
 65 70 75
 Thr Val His Arg Pro Leu Ala Ala Thr Ser Pro Ala Gln Ser Pro
 80 85 90
 Glu Thr Thr Pro Leu Trp Ala Thr Ala Gly Pro Ser Ser Thr Thr
 95 100 105
 Phe Gln Ala Pro Leu Gly Pro Ser Pro Thr Thr Pro Pro Ala Ala
 110 115 120
 Glu Arg Thr Ser Thr Thr Ser Gln Ala Pro Thr Arg Pro Ala Pro
 125 130 135
 Thr Thr Leu Ser Thr Thr Thr Gly Pro Ala Pro Thr Thr Pro Val
 140 145 150
 Ala Thr Thr Val Pro Ala Pro Thr Thr Pro Arg Thr Pro Thr Pro
 155 160 165
 Asp Leu Pro Ser Ser Ser Asn Ser Ser Val Leu Pro Thr Pro Pro

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 170 | | 175 | | 180 |
| Ala Thr Glu Ala | Pro Ser Ser Pro Pro | Pro Glu Tyr Val Cys Asn | | | |
| | 185 | 190 | | | 195 |
| Cys Ser Val Val | Gly Ser Leu Asn Val | Asn Arg Cys Asn Gln Thr | | | |
| | 200 | 205 | | | 210 |
| Thr Gly Gln Cys | Glu Cys Arg Pro Gly | Tyr Gln Gly Leu His Cys | | | |
| | 215 | 220 | | | 225 |
| Glu Thr Cys Lys | Glu Gly Phe Tyr Leu | Asn Tyr Thr Ser Gly Leu | | | |
| | 230 | 235 | | | 240 |
| Cys Gln Pro Cys | Asp Cys Ser Pro His | Gly Ala Leu Ser Ile Pro | | | |
| | 245 | 250 | | | 255 |

Cys Asn Arg

<210> 154
 <211> 24
 <212> DNA
 <213> Artificial
 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 154
 aactgctctg tggttggaag cctg 24

<210> 155
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 155
 cagtcacatg gctgacagac ccac 24

<210> 156
 <211> 38
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-38
 <223> Synthetic construct.

<400> 156
 aggttatcag gggcttcact gtgaaacctg caaagagg 38

<210> 157
 <211> 689
 <212> DNA
 <213> Homo sapiens

<400> 157
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 ctggaccctg agcagcttct tgggccctgg tacgtgcttg cgggtggcctc 150
 ccgggaaaag ggctttgccca tggagaagga catgaagaac gtcgtggggg 200
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 cacgggctgg gaggggtgtga ccagagtgtc atggacctga taaagcgaaa 300
 ctccggatgg gtgtttgaga atccctcaat aggcgtgctg gagctctggg 350
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 gggccagca ccagctcaga ataaagcgat tccacagca 689

<210> 158
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 158
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 1 5 10 15
 Pro Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln
 20 25 30
 Leu Leu Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys
 35 40 45
 Gly Phe Ala Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val
 50 55 60
 Val Thr Leu Thr Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln
 65 70 75
 His Gly Leu Gly Gly Cys Asp Gln Ser Val Met Asp Leu Ile Lys
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Ser | Gly | Trp | Val | Phe | Glu | Asn | Pro | Ser | Ile | Gly | Val | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Leu | Trp | Val | Leu | Ala | Thr | Asn | Phe | Arg | Asp | Tyr | Ala | Ile | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Phe | Thr | Gln | Leu | Glu | Phe | Gly | Asp | Glu | Pro | Phe | Asn | Thr | Val | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Tyr | Ser | Leu | Thr | Glu | Thr | Ala | Ser | Gln | Glu | Ala | Met | Gly | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Thr | Lys | Trp | Ser | Arg | Ser | Leu | Gly | Phe | Leu | Ser | Gln | | |
| | | | | 155 | | | | | 160 | | | | | |

<210> 159

<211> 1665

<212> DNA

<213> Homo sapiens

<400> 159

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gtaaactgct gacgatgcag agttccgtga cgggtgcagga aggcctgtgt 150
gtccatgtgc cctgctcctt ctctacccc tcgcatggct ggatttaccc 200
tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250
aggatgctcc agtgggcaca aacaaccag ctcgggcagt gtgggaggag 300
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gtatggagaa aggaagtata aaatggaatt ataaacatca ccggctctct 450
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cctggagtcc ggctgcccc agaatctgac ctgctctgtg ccctgggcct 550
gtgagcaggg gacaccccct atgatctcct ggataggga ctccgtgtcc 600
cccctggacc cctccaccac ccgctcctcg gtgctcacc tcatcccaca 650
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<210> 160

<211> 463

<212> PRT

<213> Homo sapiens

<400> 160

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Trp | Gly | Arg | Glu | Arg | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Glu | Gly | Gln | Thr | Ser | Lys | Leu | Leu | Thr | Met | Gln | Ser | Ser | Val | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Gln | Glu | Gly | Leu | Cys | Val | His | Val | Pro | Cys | Ser | Phe | Ser | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Ser | His | Gly | Trp | Ile | Tyr | Pro | Gly | Pro | Val | Val | His | Gly | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Trp | Phe | Arg | Glu | Gly | Ala | Asn | Thr | Asp | Gln | Asp | Ala | Pro | Val | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Asn | Asn | Pro | Ala | Arg | Ala | Val | Trp | Glu | Glu | Thr | Arg | Asp | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | His | Leu | Leu | Gly | Asp | Pro | His | Thr | Lys | Asn | Cys | Thr | Leu | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Arg | Asp | Ala | Arg | Arg | Ser | Asp | Ala | Gly | Arg | Tyr | Phe | Phe | Arg |

| | | |
|---|-----|-----|
| 110 | 115 | 120 |
| Met Glu Lys Gly Ser Ile Lys Trp Asn Tyr Lys His His Arg Leu | | |
| 125 | 130 | 135 |
| Ser Val Asn Val Thr Ala Leu Thr His Arg Pro Asn Ile Leu Ile | | |
| 140 | 145 | 150 |
| Pro Gly Thr Leu Glu Ser Gly Cys Pro Gln Asn Leu Thr Cys Ser | | |
| 155 | 160 | 165 |
| Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro Met Ile Ser Trp | | |
| 170 | 175 | 180 |
| Ile Gly Thr Ser Val Ser Pro Leu Asp Pro Ser Thr Thr Arg Ser | | |
| 185 | 190 | 195 |
| Ser Val Leu Thr Leu Ile Pro Gln Pro Gln Asp His Gly Thr Ser | | |
| 200 | 205 | 210 |
| Leu Thr Cys Gln Val Thr Phe Pro Gly Ala Ser Val Thr Thr Asn | | |
| 215 | 220 | 225 |
| Lys Thr Val His Leu Asn Val Ser Tyr Pro Pro Gln Asn Leu Thr | | |
| 230 | 235 | 240 |
| Met Thr Val Phe Gln Gly Asp Gly Thr Val Ser Thr Val Leu Gly | | |
| 245 | 250 | 255 |
| Asn Gly Ser Ser Leu Ser Leu Pro Glu Gly Gln Ser Leu Arg Leu | | |
| 260 | 265 | 270 |
| Val Cys Ala Val Asp Ala Val Asp Ser Asn Pro Pro Ala Arg Leu | | |
| 275 | 280 | 285 |
| Ser Leu Ser Trp Arg Gly Leu Thr Leu Cys Pro Ser Gln Pro Ser | | |
| 290 | 295 | 300 |
| Asn Pro Gly Val Leu Glu Leu Pro Trp Val His Leu Arg Asp Ala | | |
| 305 | 310 | 315 |
| Ala Glu Phe Thr Cys Arg Ala Gln Asn Pro Leu Gly Ser Gln Gln | | |
| 320 | 325 | 330 |
| Val Tyr Leu Asn Val Ser Leu Gln Ser Lys Ala Thr Ser Gly Val | | |
| 335 | 340 | 345 |
| Thr Gln Gly Val Val Gly Gly Ala Gly Ala Thr Ala Leu Val Phe | | |
| 350 | 355 | 360 |
| Leu Ser Phe Cys Val Ile Phe Val Val Val Arg Ser Cys Arg Lys | | |
| 365 | 370 | 375 |
| Lys Ser Ala Arg Pro Ala Ala Gly Val Gly Asp Thr Gly Ile Glu | | |
| 380 | 385 | 390 |
| Asp Ala Asn Ala Val Arg Gly Ser Ala Ser Gln Gly Pro Leu Thr | | |
| 395 | 400 | 405 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Trp | Ala | Glu | Asp | Ser | Pro | Pro | Asp | Gln | Pro | Pro | Pro | Ala |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ser | Ala | Arg | Ser | Ser | Val | Gly | Glu | Gly | Glu | Leu | Gln | Tyr | Ala | Ser |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Ser | Phe | Gln | Met | Val | Lys | Pro | Trp | Asp | Ser | Arg | Gly | Gln | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ala | Thr | Asp | Thr | Glu | Tyr | Ser | Glu | Ile | Lys | Ile | His | Arg | | |
| | | | | 455 | | | | | 460 | | | | | |

<210> 161
 <211> 739
 <212> DNA
 <213> Homo sapiens

<400> 161
 gacgcccagt gacctgccga ggtcggcagc acagagctct ggagatgaag 50
 accctgttcc tgggtgtcac gctcggcctg gccgctgccc tgtccttcac 100
 cctggaggag gaggatatca cagggacctg gtacgtgaag gccatgggtgg 150
 tcgataagga ctttccggag gacaggaggc ccaggaaggt gtccccagtg 200
 aaggtgacag ccctggggcgg tgggaagttg gaagccacgt tcaccttcac 250
 gagggaggat cgggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300
 agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350
 gagctgcccga ggagggacca ctacatcttt tactgcaaag accagcacca 400
 tgggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450
 accgggaggc cctggaagaa tttaagaaat tgggtgcagc caagggactc 500
 tcggaggagg acattttcac gccctgcag acgggaagct gcgttcccga 550
 aactaggca gccccgggt ctgcacctcc agagcccacc ctaccaccag 600
 acacagagcc cggaccacct ggacctaccc tccagccatg acccttcctt 650
 gctcccaccc acctgactcc aaataaagtc cttttccccc aaaaaaaaaa 700
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 739

<210> 162
 <211> 170
 <212> PRT
 <213> Homo sapiens

<400> 162
 Met Lys Thr Leu Phe Leu Gly Val Thr Leu Gly Leu Ala Ala Ala
 1 5 10 15
 Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr

| 20 | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Ala | Met | Val | Val | Asp | Lys | Asp | Phe | Pro | Glu | Asp | Arg | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Lys | Val | Ser | Pro | Val | Lys | Val | Thr | Ala | Leu | Gly | Gly | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Leu | Glu | Ala | Thr | Phe | Thr | Phe | Met | Arg | Glu | Asp | Arg | Cys | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gln | Lys | Lys | Ile | Leu | Met | Arg | Lys | Thr | Glu | Glu | Pro | Gly | Lys | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ala | Tyr | Gly | Gly | Arg | Lys | Leu | Met | Tyr | Leu | Gln | Glu | Leu | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Arg | Asp | His | Tyr | Ile | Phe | Tyr | Cys | Lys | Asp | Gln | His | His | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Leu | Leu | His | Met | Gly | Lys | Leu | Val | Gly | Arg | Asn | Ser | Asp | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Arg | Glu | Ala | Leu | Glu | Glu | Phe | Lys | Lys | Leu | Val | Gln | Arg | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Leu | Ser | Glu | Glu | Asp | Ile | Phe | Thr | Pro | Leu | Gln | Thr | Gly | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Cys | Val | Pro | Glu | His | | | | | | | | | | |
| | | | | 170 | | | | | | | | | | |

<210> 163
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 163
 ggagatgaag accctgttcc tg 22

<210> 164
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 164
 ggagatgaag accctgttcc tgggtg 26

<210> 165
<211> 21
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct.

<400> 165
gtcctccgga aagtccttat c 21

<210> 166
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 166
gcctagtgtt cgggaacgca gcttc 25

<210> 167
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 167
cagggacctg gtacgtgaag gccatggtgg tcgataagga cttccggag 50

<210> 168
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 168
ctgtccttca ccctggagga ggaggatatc acagggacct ggtac 45

<210> 169
<211> 1204
<212> DNA
<213> Homo sapiens

<400> 169

gttccgcaga tgcagaggtt gaggtggctg cgggactgga agtcatcggg 50
 cagaggtctc acagcagcca aggaacctgg ggcccgtcc tccccctcc 100
 aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 150
 gtagggggag agaccaggat catcaagggg ttcgagtgc agcctcactc 200
 ccagccctgg caggcagccc tgttcgagaa gacgcggcta ctctgtggg 250
 cgacgctcat cgtccccaaga tggctcctga cagcagccca ctgcctcaag 300
 ccccgctaca tagttcacct ggggcagcac aacctccaga aggaggagg 350
 ctgtgagcag acccgacag cactgagtc cttccccac cccggcttca 400
 acaacagcct ccccaacaaa gaccaccga atgacatcat gctggagaag 450
 atggcatcgc cagtctccat cacctgggct gtgcgacccc tcacctctc 500
 ctcacgtgt gtcactgctg gcaccagctg cctcatttcc ggctggggca 550
 gcacgtccag ccccagtta cgcctgcctc acaccttgcg atgcgccaac 600
 atcaccatca ttgagacca gaagtgtgag aacgcctacc cgggaacat 650
 cacagacacc atggtgtgtg ccagcgtgca ggaagggggc aaggactcct 700
 gccaggggta ctccgggggc cctctggtct gtaaccagtc tcttcaaggc 750
 attatctcct ggggccagga tccgtgtgcg atcacccgaa agcctggtgt 800
 ctacacgaaa gtctgcaa atgtggactg gatccaggag acgatgaaga 850
 acaattagac tggaccacc caccacagcc catcaccctc catttccact 900
 tgggtgttgg ttctgttca ctctgttaat aagaaaccct aagccaagac 950
 cctctacgaa cattctttgg gcctcctgga ctacaggaga tgctgtcact 1000
 taataatcaa cctgggggtt gaaatcagtg agacctggat tcaaattctg 1050
 ccttgaaata ttgtgactct gggaatgaca acacctgggt tggttctctg 1100
 tgtatcccca gcccacaaaga cagctcctgg ccatatatca aggtttcaat 1150
 aaatatttgc taaatgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200
 aaaa 1204

<210> 170
 <211> 250
 <212> PRT
 <213> Homo sapiens

<400> 170
 Met Arg Ile Leu Gln Leu Ile Leu Leu Ala Leu Ala Thr Gly Leu
 1 5 10 15

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Gly | Glu | Thr | Arg | Ile | Ile | Lys | Gly | Phe | Glu | Cys | Lys | Pro | 20 | 25 | 30 |
| His | Ser | Gln | Pro | Trp | Gln | Ala | Ala | Leu | Phe | Glu | Lys | Thr | Arg | Leu | 35 | 40 | 45 |
| Leu | Cys | Gly | Ala | Thr | Leu | Ile | Ala | Pro | Arg | Trp | Leu | Leu | Thr | Ala | 50 | 55 | 60 |
| Ala | His | Cys | Leu | Lys | Pro | Arg | Tyr | Ile | Val | His | Leu | Gly | Gln | His | 65 | 70 | 75 |
| Asn | Leu | Gln | Lys | Glu | Glu | Gly | Cys | Glu | Gln | Thr | Arg | Thr | Ala | Thr | 80 | 85 | 90 |
| Glu | Ser | Phe | Pro | His | Pro | Gly | Phe | Asn | Asn | Ser | Leu | Pro | Asn | Lys | 95 | 100 | 105 |
| Asp | His | Arg | Asn | Asp | Ile | Met | Leu | Val | Lys | Met | Ala | Ser | Pro | Val | 110 | 115 | 120 |
| Ser | Ile | Thr | Trp | Ala | Val | Arg | Pro | Leu | Thr | Leu | Ser | Ser | Arg | Cys | 125 | 130 | 135 |
| Val | Thr | Ala | Gly | Thr | Ser | Cys | Leu | Ile | Ser | Gly | Trp | Gly | Ser | Thr | 140 | 145 | 150 |
| Ser | Ser | Pro | Gln | Leu | Arg | Leu | Pro | His | Thr | Leu | Arg | Cys | Ala | Asn | 155 | 160 | 165 |
| Ile | Thr | Ile | Ile | Glu | His | Gln | Lys | Cys | Glu | Asn | Ala | Tyr | Pro | Gly | 170 | 175 | 180 |
| Asn | Ile | Thr | Asp | Thr | Met | Val | Cys | Ala | Ser | Val | Gln | Glu | Gly | Gly | 185 | 190 | 195 |
| Lys | Asp | Ser | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asn | 200 | 205 | 210 |
| Gln | Ser | Leu | Gln | Gly | Ile | Ile | Ser | Trp | Gly | Gln | Asp | Pro | Cys | Ala | 215 | 220 | 225 |
| Ile | Thr | Arg | Lys | Pro | Gly | Val | Tyr | Thr | Lys | Val | Cys | Lys | Tyr | Val | 230 | 235 | 240 |
| Asp | Trp | Ile | Gln | Glu | Thr | Met | Lys | Asn | Asn | | | | | | 245 | 250 | |

<210> 171

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-25

<223> Synthetic construct.

<400> 171
ggctgcggga ctggaagtca tcggg 25

<210> 172
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 172
ctccaggcca tgaggattct gcag 24

<210> 173
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 173
cctctggtct gtaaccag 18

<210> 174
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 174
tctgtgatgt tgccggggta ggcg 24

<210> 175
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 175
cgtgtagaca ccaggctttc ggggtg 25

<210> 176
<211> 18
<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-18

<223> Synthetic construct.

<400> 176

cccttgatga tcctgggc 18

<210> 177

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-50

<223> Synthetic construct.

<400> 177

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 50

<210> 178

<211> 43

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-43

<223> Synthetic construct.

<400> 178

gagagaccag gatcatcaag gggttcgagt gcaagcctca ctc 43

<210> 179

<211> 907

<212> DNA

<213> Homo sapiens

<400> 179

gagcagtgtt ctgctggagc cgatgccaaa aaccatgcat ttcttattca 50

gattcattgt tttcttttat ctgtggggcc tttttactgc tcagagacaa 100

aagaaagagg agagcaccga agaagtgaat atagaagttt tgcacgtcc 150

agaaaactgc tctaagacaa gcaagaagg agacctacta aatgcccatt 200

atgacggcta cctggctaaa gacggctcga aattctactg cagccggaca 250

caaaatgaag gccaccccaa atggtttggt cttggtgttg ggcaagtcac 300

aaaaggccta gacattgcta tgacagatat gtgccttgga gaaaagcgaa 350

aagtagttat acccccttca tttgcatacg gaaaggaagg ctatgcagaa 400

ggcaagattc caccggatgc tacattgatt ttgagattg aactttatgc 450
 tgtgacaaaa ggaccacgga gcattgagac atttaaaca atagacatgg 500
 acaatgacag gcagctctct aaagccgaga taaacctcta cttgcaaagg 550
 gaatttgaaa aagatgagaa gccacgtgac aagtcataac aggatgcagt 600
 tttagaagat atttttaaga agaatgacca tgatggtgat ggcttcattt 650
 ctcccaagga atacaatgta taccaacacg atgaactata gcatatttgt 700
 atttctactt ttttttttta gctatttact gtactttatg tataaaacaa 750
 agtcactttt ctccaagttg tatttgctat ttttccccta tgagaagata 800
 ttttgatctc cccaatacat tgattttggt ataataaatg tgaggctgtt 850
 ttgcaaaactt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900
 aaaaaaa 907

<210> 180
 <211> 222
 <212> PRT
 <213> Homo sapiens

<400> 180
 Met Pro Lys Thr Met His Phe Leu Phe Arg Phe Ile Val Phe Phe
 1 5 10 15
 Tyr Leu Trp Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu
 20 25 30
 Ser Thr Glu Glu Val Lys Ile Glu Val Leu His Arg Pro Glu Asn
 35 40 45
 Cys Ser Lys Thr Ser Lys Lys Gly Asp Leu Leu Asn Ala His Tyr
 50 55 60
 Asp Gly Tyr Leu Ala Lys Asp Gly Ser Lys Phe Tyr Cys Ser Arg
 65 70 75
 Thr Gln Asn Glu Gly His Pro Lys Trp Phe Val Leu Gly Val Gly
 80 85 90
 Gln Val Ile Lys Gly Leu Asp Ile Ala Met Thr Asp Met Cys Pro
 95 100 105
 Gly Glu Lys Arg Lys Val Val Ile Pro Pro Ser Phe Ala Tyr Gly
 110 115 120
 Lys Glu Gly Tyr Ala Glu Gly Lys Ile Pro Pro Asp Ala Thr Leu
 125 130 135
 Ile Phe Glu Ile Glu Leu Tyr Ala Val Thr Lys Gly Pro Arg Ser
 140 145 150

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Glu | Thr | Phe | Lys | Gln | Ile | Asp | Met | Asp | Asn | Asp | Arg | Gln | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Lys | Ala | Glu | Ile | Asn | Leu | Tyr | Leu | Gln | Arg | Glu | Phe | Glu | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asp | Glu | Lys | Pro | Arg | Asp | Lys | Ser | Tyr | Gln | Asp | Ala | Val | Leu | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asp | Ile | Phe | Lys | Lys | Asn | Asp | His | Asp | Gly | Asp | Gly | Phe | Ile | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Lys | Glu | Tyr | Asn | Val | Tyr | Gln | His | Asp | Glu | Leu | | | |
| | | | | 215 | | | | | 220 | | | | | |

<210> 181
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 181
 gtgtttctgct ggagccgatg cc 22

<210> 182
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

<400> 182
 gacatggaca atgacagg 18

<210> 183
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

<400> 183
 cctttcagga tgtaggag 18

<210> 184
 <211> 18
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 184
gatgtctgcc accccaag 18

<210> 185
<211> 27
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-27
<223> Synthetic construct.

<400> 185
gcacacctgat atgacttgct acgtggc 27

<210> 186
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 186
tacaagaggg aagaggagtt gcac 24

<210> 187
<211> 52
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-52
<223> Synthetic construct.

<400> 187
gcccattatg acggctacct ggctaaagac ggctcgaaat tctactgcag 50
cc 52

<210> 188
<211> 573
<212> DNA
<213> Homo sapiens

<400> 188
cagaaatgca gggaccattg cttcttccag gcctctgctt tctgctgagc 50
ctctttggag ctgtgactca gaaaacaaa acttcctgtg ctaagtgcc 100

cccaaatgct tcctgtgtca ataacactca ctgcacctgc aaccatggat 150
 atactttctgg atctgggcag aaactattca cattccccctt ggagacatgt 200
 aacgccaggc atggtggctc gcgcctgtaa tcccagttct ttgggaagcc 250
 aaggcagggtg gatcacctga ggtcaggagt ttgagaccag cctggccaac 300
 atagtgaaac cccgtgtcta ctaaaaatac aaaaatcagc cgggcgtggt 350
 ggtgcatgcc tgcaatccca gttactcggg aggctgaggc aggagaatcg 400
 cttgaactca ggaggcagaa gttgcagtga acccagatcc tgccattgca 450
 ctccagcatg gatgacagag caagactccg tctcaaaaag aaaagatagt 500
 ttcttgtttc atttcgcgac tgccctctca gtgtttcctg ggatcccctc 550
 ccaaataaag tacttatatt etc 573

<210> 189

<211> 74

<212> PRT

<213> Homo sapiens

<400> 189

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Gly | Pro | Leu | Leu | Leu | Pro | Gly | Leu | Cys | Phe | Leu | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Gly | Ala | Val | Thr | Gln | Lys | Thr | Lys | Thr | Ser | Cys | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Pro | Pro | Asn | Ala | Ser | Cys | Val | Asn | Asn | Thr | His | Cys | Thr | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | His | Gly | Tyr | Thr | Ser | Gly | Ser | Gly | Gln | Lys | Leu | Phe | Thr | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | Glu | Thr | Cys | Asn | Ala | Arg | His | Gly | Gly | Ser | Arg | Leu |
| | | | | 65 | | | | | 70 | | | | |

<210> 190

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 190

agggaccatt gcttcttcca ggcc 24

<210> 191

<211> 24

<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 191
cgttacatgt ctccaagggg aatg 24

<210> 192
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 192
cctgtgctaa gtgccccca aatgcttcct gtgtcaataa cactcactgc 50

<210> 193
<211> 1091
<212> DNA
<213> Homo sapiens

<400> 193
caagcaggtc atccccttgg tgaccttcaa agagaagcag agagggcaga 50
ggtggggggc acagggaaag ggtgacctct gagattcccc ttttccccca 100
gactttggaa gtgaccacc atgggggtca gcatcttttt gctcctctgt 150
gttcttgggc tcagccaggc agccacaccg aagattttca atggcactga 200
gtgtgggctg aactcacagc cgtggcaggt ggggctgttt gagggcacca 250
gcctgcgctg cgggggtgtc cttattgacc acaggtgggt cctcacagcg 300
gctcactgca gcggcagcag gtactgggtg cgctggggg aacacagcct 350
cagccagctc gactggaccg agcagatccg gcacagcggc ttctctgtga 400
cccatcccgg ctacctggga gcctcgacga gccacgagca cgacctccgg 450
ctgctgcggc tgcgcctgcc cgtccgcgta accagcagcg ttcaaccct 500
gcccctgccc aatgactgtg caaccgctgg caccgagtgc caggtctcag 550
gctggggcat caccaaccac ccacggaacc cattcccga tctgctccag 600
tgctcaacc tctccatcgt ctcccatgcc acctgccatg gtgtgtatcc 650
cgggagaatc acgagcaaca tgggtgtgtg agggggcgtc ccggggcagg 700
atgcctgcca ggtgattct gggggcccc tgggtgtgtg gggagtcctt 750
caaggtctgg tgcctgggg gtctgtgggg ccctgtggac aagatggcat 800

ccctggagtc tacacctata ttgcaagta tgtggactgg atccggatga 850
 tcatgaggaa caactgacct gtttcctcca cctccacccc cacccttaa 900
 cttgggtacc cctctggccc tcagagcacc aatatctcct ccatcacttc 950
 ccctagctcc actcttgttg gcctgggaac ttcttggaac ttttaactcct 1000
 gccagccctt ctaagaccca cgagcggggg gagagaagtg tgcaatagtc 1050
 tggaataaat ataatgaag gaggggcaaa aaaaaaaaaa a 1091

<210> 194

<211> 248

<212> PRT

<213> Homo sapiens

<400> 194

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Leu | Ser | Ile | Phe | Leu | Leu | Leu | Cys | Val | Leu | Gly | Leu | Ser | 1 | 5 | 10 | 15 |
| Gln | Ala | Ala | Thr | Pro | Lys | Ile | Phe | Asn | Gly | Thr | Glu | Cys | Gly | Arg | 20 | 25 | 30 | |
| Asn | Ser | Gln | Pro | Trp | Gln | Val | Gly | Leu | Phe | Glu | Gly | Thr | Ser | Leu | 35 | 40 | 45 | |
| Arg | Cys | Gly | Gly | Val | Leu | Ile | Asp | His | Arg | Trp | Val | Leu | Thr | Ala | 50 | 55 | 60 | |
| Ala | His | Cys | Ser | Gly | Ser | Arg | Tyr | Trp | Val | Arg | Leu | Gly | Glu | His | 65 | 70 | 75 | |
| Ser | Leu | Ser | Gln | Leu | Asp | Trp | Thr | Glu | Gln | Ile | Arg | His | Ser | Gly | 80 | 85 | 90 | |
| Phe | Ser | Val | Thr | His | Pro | Gly | Tyr | Leu | Gly | Ala | Ser | Thr | Ser | His | 95 | 100 | 105 | |
| Glu | His | Asp | Leu | Arg | Leu | Leu | Arg | Leu | Arg | Leu | Pro | Val | Arg | Val | 110 | 115 | 120 | |
| Thr | Ser | Ser | Val | Gln | Pro | Leu | Pro | Leu | Pro | Asn | Asp | Cys | Ala | Thr | 125 | 130 | 135 | |
| Ala | Gly | Thr | Glu | Cys | His | Val | Ser | Gly | Trp | Gly | Ile | Thr | Asn | His | 140 | 145 | 150 | |
| Pro | Arg | Asn | Pro | Phe | Pro | Asp | Leu | Leu | Gln | Cys | Leu | Asn | Leu | Ser | 155 | 160 | 165 | |
| Ile | Val | Ser | His | Ala | Thr | Cys | His | Gly | Val | Tyr | Pro | Gly | Arg | Ile | 170 | 175 | 180 | |
| Thr | Ser | Asn | Met | Val | Cys | Ala | Gly | Gly | Val | Pro | Gly | Gln | Asp | Ala | 185 | 190 | 195 | |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Gly | Gly | Val | Leu | | | | |

| | | | | | |
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| Gly Ile Pro Gly Val Tyr Thr Tyr Ile Cys Lys Tyr Val Asp Trp | | | | | |
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| Ile Arg Met Ile Met Arg Asn Asn | | | | | |
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<213> Homo sapiens

<400> 196

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| Met | Ser | Gly | Glu | Leu | Ser | Asn | Arg | Phe | Gln | Gly | Gly | Lys | Ala | Phe | 1 | 5 | 10 | 15 |
| Gly | Leu | Leu | Lys | Ala | Arg | Gln | Glu | Arg | Arg | Leu | Ala | Glu | Ile | Asn | 20 | 25 | 30 | |
| Arg | Glu | Phe | Leu | Cys | Asp | Gln | Lys | Tyr | Ser | Asp | Glu | Glu | Asn | Leu | 35 | 40 | 45 | |
| Pro | Glu | Lys | Leu | Thr | Ala | Phe | Lys | Glu | Lys | Tyr | Met | Glu | Phe | Asp | 50 | 55 | 60 | |
| Leu | Asn | Asn | Glu | Gly | Glu | Ile | Asp | Leu | Met | Ser | Leu | Lys | Arg | Met | 65 | 70 | 75 | |
| Met | Glu | Lys | Leu | Gly | Val | Pro | Lys | Thr | His | Leu | Glu | Met | Lys | Lys | 80 | 85 | 90 | |
| Met | Ile | Ser | Glu | Val | Thr | Gly | Gly | Val | Ser | Asp | Thr | Ile | Ser | Tyr | 95 | 100 | 105 | |
| Arg | Asp | Phe | Val | Asn | Met | Met | Leu | Gly | Lys | Arg | Ser | Ala | Val | Leu | 110 | 115 | 120 | |
| Lys | Leu | Val | Met | Met | Phe | Glu | Gly | Lys | Ala | Asn | Glu | Ser | Ser | Pro | 125 | 130 | 135 | |
| Lys | Pro | Val | Gly | Pro | Pro | Pro | Glu | Arg | Asp | Ile | Ala | Ser | Leu | Pro | 140 | 145 | 150 | |

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<211> 4842

<212> DNA

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<212> PRT

<213> Homo sapiens

<400> 198

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| Met | Ala | Pro | Gly | Trp | Ala | Gly | Val | Gly | Ala | Ala | Val | Arg | Ala | Arg | 1 | 5 | 10 | 15 |
| Leu | Ala | Leu | Ala | Leu | Ala | Leu | Ala | Ser | Val | Leu | Ser | Gly | Pro | Pro | 20 | 25 | 30 | |
| Ala | Val | Ala | Cys | Pro | Thr | Lys | Cys | Thr | Cys | Ser | Ala | Ala | Ser | Val | 35 | 40 | 45 | |
| Asp | Cys | His | Gly | Leu | Gly | Leu | Arg | Ala | Val | Pro | Arg | Gly | Ile | Pro | 50 | 55 | 60 | |
| Arg | Asn | Ala | Glu | Arg | Leu | Asp | Leu | Asp | Arg | Asn | Asn | Ile | Thr | Arg | 65 | 70 | 75 | |
| Ile | Thr | Lys | Met | Asp | Phe | Ala | Gly | Leu | Lys | Asn | Leu | Arg | Val | Leu | 80 | 85 | 90 | |
| His | Leu | Glu | Asp | Asn | Gln | Val | Ser | Val | Ile | Glu | Arg | Gly | Ala | Phe | 95 | 100 | 105 | |
| Gln | Asp | Leu | Lys | Gln | Leu | Glu | Arg | Leu | Arg | Leu | Asn | Lys | Asn | Lys | 110 | 115 | 120 | |
| Leu | Gln | Val | Leu | Pro | Glu | Leu | Leu | Phe | Gln | Ser | Thr | Pro | Lys | Leu | 125 | 130 | 135 | |
| Thr | Arg | Leu | Asp | Leu | Ser | Glu | Asn | Gln | Ile | Gln | Gly | Ile | Pro | Arg | 140 | 145 | 150 | |
| Lys | Ala | Phe | Arg | Gly | Ile | Thr | Asp | Val | Lys | Asn | Leu | Gln | Leu | Asp | 155 | 160 | 165 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asn Asn His Ile | Ser Cys Ile Glu Asp | Gly Ala Phe Arg Ala | Leu |
| 170 | | 175 | 180 |
| Arg Asp Leu Glu | Ile Leu Thr Leu Asn | Asn Asn Asn Ile Ser | Arg |
| 185 | | 190 | 195 |
| Ile Leu Val Thr | Ser Phe Asn His Met | Pro Lys Ile Arg Thr | Leu |
| 200 | | 205 | 210 |
| Arg Leu His Ser | Asn His Leu Tyr Cys | Asp Cys His Leu Ala | Trp |
| 215 | | 220 | 225 |
| Leu Ser Asp Trp | Leu Arg Gln Arg Arg | Thr Val Gly Gln Phe | Thr |
| 230 | | 235 | 240 |
| Leu Cys Met Ala | Pro Val His Leu Arg | Gly Phe Asn Val Ala | Asp |
| 245 | | 250 | 255 |
| Val Gln Lys Lys | Glu Tyr Val Cys Pro | Ala Pro His Ser Glu | Pro |
| 260 | | 265 | 270 |
| Pro Ser Cys Asn | Ala Asn Ser Ile Ser | Cys Pro Ser Pro Cys | Thr |
| 275 | | 280 | 285 |
| Cys Ser Asn Asn | Ile Val Asp Cys Arg | Gly Lys Gly Leu Met | Glu |
| 290 | | 295 | 300 |
| Ile Pro Ala Asn | Leu Pro Glu Gly Ile | Val Glu Ile Arg Leu | Glu |
| 305 | | 310 | 315 |
| Gln Asn Ser Ile | Lys Ala Ile Pro Ala | Gly Ala Phe Thr Gln | Tyr |
| 320 | | 325 | 330 |
| Lys Lys Leu Lys | Arg Ile Asp Ile Ser | Lys Asn Gln Ile Ser | Asp |
| 335 | | 340 | 345 |
| Ile Ala Pro Asp | Ala Phe Gln Gly Leu | Lys Ser Leu Thr Ser | Leu |
| 350 | | 355 | 360 |
| Val Leu Tyr Gly | Asn Lys Ile Thr Glu | Ile Ala Lys Gly Leu | Phe |
| 365 | | 370 | 375 |
| Asp Gly Leu Val | Ser Leu Gln Leu Leu | Leu Leu Asn Ala Asn | Lys |
| 380 | | 385 | 390 |
| Ile Asn Cys Leu | Arg Val Asn Thr Phe | Gln Asp Leu Gln Asn | Leu |
| 395 | | 400 | 405 |
| Asn Leu Leu Ser | Leu Tyr Asp Asn Lys | Leu Gln Thr Ile Ser | Lys |
| 410 | | 415 | 420 |
| Gly Leu Phe Ala | Pro Leu Gln Ser Ile | Gln Thr Leu His Leu | Ala |
| 425 | | 430 | 435 |
| Gln Asn Pro Phe | Val Cys Asp Cys His | Leu Lys Trp Leu Ala | Asp |
| 440 | | 445 | 450 |
| Tyr Leu Gln Asp | Asn Pro Ile Glu Thr | Ser Gly Ala Arg Cys | Ser |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 455 | | | | | 460 | | | | | 465 |
| Ser | Pro | Arg | Arg | Leu 470 | Ala | Asn | Lys | Arg | Ile 475 | Ser | Gln | Ile | Lys | Ser 480 |
| Lys | Lys | Phe | Arg | Cys 485 | Ser | Gly | Ser | Glu | Asp 490 | Tyr | Arg | Ser | Arg | Phe 495 |
| Ser | Ser | Glu | Cys | Phe 500 | Met | Asp | Leu | Val | Cys 505 | Pro | Glu | Lys | Cys | Arg 510 |
| Cys | Glu | Gly | Thr | Ile 515 | Val | Asp | Cys | Ser | Asn 520 | Gln | Lys | Leu | Val | Arg 525 |
| Ile | Pro | Ser | His | Leu 530 | Pro | Glu | Tyr | Val | Thr 535 | Asp | Leu | Arg | Leu | Asn 540 |
| Asp | Asn | Glu | Val | Ser 545 | Val | Leu | Glu | Ala | Thr 550 | Gly | Ile | Phe | Lys | Lys 555 |
| Leu | Pro | Asn | Leu | Arg 560 | Lys | Ile | Asn | Leu | Ser 565 | Asn | Asn | Lys | Ile | Lys 570 |
| Glu | Val | Arg | Glu | Gly 575 | Ala | Phe | Asp | Gly | Ala 580 | Ala | Ser | Val | Gln | Glu 585 |
| Leu | Met | Leu | Thr | Gly 590 | Asn | Gln | Leu | Glu | Thr 595 | Val | His | Gly | Arg | Val 600 |
| Phe | Arg | Gly | Leu | Ser 605 | Gly | Leu | Lys | Thr | Leu 610 | Met | Leu | Arg | Ser | Asn 615 |
| Leu | Ile | Ser | Cys | Val 620 | Ser | Asn | Asp | Thr | Phe 625 | Ala | Gly | Leu | Ser | Ser 630 |
| Val | Arg | Leu | Leu | Ser 635 | Leu | Tyr | Asp | Asn | Arg 640 | Ile | Thr | Thr | Ile | Thr 645 |
| Pro | Gly | Ala | Phe | Thr 650 | Thr | Leu | Val | Ser | Leu 655 | Ser | Thr | Ile | Asn | Leu 660 |
| Leu | Ser | Asn | Pro | Phe 665 | Asn | Cys | Asn | Cys | His 670 | Leu | Ala | Trp | Leu | Gly 675 |
| Lys | Trp | Leu | Arg | Lys 680 | Arg | Arg | Ile | Val | Ser 685 | Gly | Asn | Pro | Arg | Cys 690 |
| Gln | Lys | Pro | Phe | Phe 695 | Leu | Lys | Glu | Ile | Pro 700 | Ile | Gln | Asp | Val | Ala 705 |
| Ile | Gln | Asp | Phe | Thr 710 | Cys | Asp | Gly | Asn | Glu 715 | Glu | Ser | Ser | Cys | Gln 720 |
| Leu | Ser | Pro | Arg | Cys 725 | Pro | Glu | Gln | Cys | Thr 730 | Cys | Met | Glu | Thr | Val 735 |
| Val | Arg | Cys | Ser | Asn 740 | Lys | Gly | Leu | Arg | Ala 745 | Leu | Pro | Arg | Gly | Met 750 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Pro | Lys | Asp | Val | Thr | Glu | Leu | Tyr | Leu | Glu | Gly | Asn | His | Leu | Thr | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ala | Val | Pro | Arg | Glu | Leu | Ser | Ala | Leu | Arg | His | Leu | Thr | Leu | Ile | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Asp | Leu | Ser | Asn | Asn | Ser | Ile | Ser | Met | Leu | Thr | Asn | Tyr | Thr | Phe | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Ser | Asn | Met | Ser | His | Leu | Ser | Thr | Leu | Ile | Leu | Ser | Tyr | Asn | Arg | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Leu | Arg | Cys | Ile | Pro | Val | His | Ala | Phe | Asn | Gly | Leu | Arg | Ser | Leu | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Arg | Val | Leu | Thr | Leu | His | Gly | Asn | Asp | Ile | Ser | Ser | Val | Pro | Glu | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Gly | Ser | Phe | Asn | Asp | Leu | Thr | Ser | Leu | Ser | His | Leu | Ala | Leu | Gly | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Thr | Asn | Pro | Leu | His | Cys | Asp | Cys | Ser | Leu | Arg | Trp | Leu | Ser | Glu | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Trp | Val | Lys | Ala | Gly | Tyr | Lys | Glu | Pro | Gly | Ile | Ala | Arg | Cys | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Ser | Pro | Glu | Pro | Met | Ala | Asp | Arg | Leu | Leu | Leu | Thr | Thr | Pro | Thr | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| His | Arg | Phe | Gln | Cys | Lys | Gly | Pro | Val | Asp | Ile | Asn | Ile | Val | Ala | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Lys | Cys | Asn | Ala | Cys | Leu | Ser | Ser | Pro | Cys | Lys | Asn | Asn | Gly | Thr | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Cys | Thr | Gln | Asp | Pro | Val | Glu | Leu | Tyr | Arg | Cys | Ala | Cys | Pro | Tyr | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Ser | Tyr | Lys | Gly | Lys | Asp | Cys | Thr | Val | Pro | Ile | Asn | Thr | Cys | Ile | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Gln | Asn | Pro | Cys | Gln | His | Gly | Gly | Thr | Cys | His | Leu | Ser | Asp | Ser | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| His | Lys | Asp | Gly | Phe | Ser | Cys | Ser | Cys | Pro | Leu | Gly | Phe | Glu | Gly | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Gln | Arg | Cys | Glu | Ile | Asn | Pro | Asp | Asp | Cys | Glu | Asp | Asn | Asp | Cys | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Glu | Asn | Asn | Ala | Thr | Cys | Val | Asp | Gly | Ile | Asn | Asn | Tyr | Val | Cys | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Ile | Cys | Pro | Pro | Asn | Tyr | Thr | Gly | Glu | Leu | Cys | Asp | Glu | Val | Ile | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | His | Cys | Val | Pro | Glu | Leu | Asn | Leu | Cys | Gln | His | Glu | Ala | Lys | |

| | | |
|---|------|------|
| 1040 | 1045 | 1050 |
| Cys Ile Pro Leu Asp Lys Gly Phe Ser Cys Glu Cys Val Pro Gly | | |
| 1055 | 1060 | 1065 |
| Tyr Ser Gly Lys Leu Cys Glu Thr Asp Asn Asp Asp Cys Val Ala | | |
| 1070 | 1075 | 1080 |
| His Lys Cys Arg His Gly Ala Gln Cys Val Asp Thr Ile Asn Gly | | |
| 1085 | 1090 | 1095 |
| Tyr Thr Cys Thr Cys Pro Gln Gly Phe Ser Gly Pro Phe Cys Glu | | |
| 1100 | 1105 | 1110 |
| His Pro Pro Pro Met Val Leu Leu Gln Thr Ser Pro Cys Asp Gln | | |
| 1115 | 1120 | 1125 |
| Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val Val Gln Gln Glu | | |
| 1130 | 1135 | 1140 |
| Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro Arg Cys Glu | | |
| 1145 | 1150 | 1155 |
| Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr Val Glu | | |
| 1160 | 1165 | 1170 |
| Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu Gln | | |
| 1175 | 1180 | 1185 |
| Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp | | |
| 1190 | 1195 | 1200 |
| Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu | | |
| 1205 | 1210 | 1215 |
| Val Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val | | |
| 1220 | 1225 | 1230 |
| Glu Thr Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr | | |
| 1235 | 1240 | 1245 |
| Leu Asn Gln Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys | | |
| 1250 | 1255 | 1260 |
| Ser Leu Gly Lys Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser | | |
| 1265 | 1270 | 1275 |
| Pro Leu Tyr Leu Gly Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala | | |
| 1280 | 1285 | 1290 |
| Leu Arg Gln Gly Thr Asp Arg Pro Leu Gly Gly Phe His Gly Cys | | |
| 1295 | 1300 | 1305 |
| Ile His Glu Val Arg Ile Asn Asn Glu Leu Gln Asp Phe Lys Ala | | |
| 1310 | 1315 | 1320 |
| Leu Pro Pro Gln Ser Leu Gly Val Ser Pro Gly Cys Lys Ser Cys | | |
| 1325 | 1330 | 1335 |

| | | | |
|---|------|------|------|
| Thr Val Cys Lys His Gly Leu Cys Arg Ser Val Glu Lys Asp Ser | 1340 | 1345 | 1350 |
| Val Val Cys Glu Cys Arg Pro Gly Trp Thr Gly Pro Leu Cys Asp | 1355 | 1360 | 1365 |
| Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg Cys His His Gly | 1370 | 1375 | 1380 |
| Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys Cys Ala Glu | 1385 | 1390 | 1395 |
| Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser Ala Asn | 1400 | 1405 | 1410 |
| Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile Ser | 1415 | 1420 | 1425 |
| Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly | 1430 | 1435 | 1440 |
| Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg | 1445 | 1450 | 1455 |
| Glu Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala | 1460 | 1465 | 1470 |
| Ser Lys Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln | 1475 | 1480 | 1485 |
| Cys Cys Gln Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln | 1490 | 1495 | 1500 |
| Cys Thr Asp Gly Ser Ser Phe Val Glu Glu Val Glu Arg His Leu | 1505 | 1510 | 1515 |
| Glu Cys Gly Cys Leu Ala Cys Ser | 1520 | | |

<210> 199
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 199
 atggagattc ctgccaaactt gccg 24

<210> 200
 <211> 24
 <212> DNA
 <213> Artificial

<220>

<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 200
ttgttgcat tgaggaggag cagc 24

<210> 201
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 201
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<210> 202
<211> 753
<212> DNA
<213> Homo sapiens

<400> 202
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gtttcttccg cagactcaac tgagaagtca gcctctgggg caggcaccag 100
gaatctgcct ttccagttct gtctccggca ggctttgagg atgaaggctg 150
cgggcattct gaccctcatt ggctgcctgg tcacaggcgc cgagtccaaa 200
atctacactc gttgcaaact ggcaaaaata ttctcgaggg ctggcctgga 250
caattactgg ggcttcagcc ttggaaactg gatctgcatg gcatattatg 300
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gactatggca tcttccagat caacagcttc gcgtggtgca gacgcggaaa 400
gctgaaggag aacaaccact gccatgtcgc ctgctcagcc ttgatcactg 450
atgacctcac agatgcaatt atctgtgcca ggaaaattgt taaagagaca 500
caaggaatga actattggca aggctggaag aaacattgtg agggcagaga 550
cctgtccgag tggaaaaaag gctgtgaggt ttcttaaact ggaactggac 600
ccaggatgct ttgcagcaac gccctaggat ttgcagtga tgtccaaatg 650
cctgtgtcat cttgtcccggt ttctcccaa tttccttctt caaacttggg 700
gagggaaaat taagctatac ttttaagaaa ataaatattt ccatttaa 750
gtc 753

<210> 203
 <211> 148
 <212> PRT
 <213> Homo sapiens

<400> 203
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 Gly Ala Glu Ser Lys Ile Tyr Thr Arg Cys Lys Leu Ala Lys Ile
 20 25 30
 Phe Ser Arg Ala Gly Leu Asp Asn Tyr Trp Gly Phe Ser Leu Gly
 35 40 45
 Asn Trp Ile Cys Met Ala Tyr Tyr Glu Ser Gly Tyr Asn Thr Thr
 50 55 60
 Ala Pro Thr Val Leu Asp Asp Gly Ser Ile Asp Tyr Gly Ile Phe
 65 70 75
 Gln Ile Asn Ser Phe Ala Trp Cys Arg Arg Gly Lys Leu Lys Glu
 80 85 90
 Asn Asn His Cys His Val Ala Cys Ser Ala Leu Ile Thr Asp Asp
 95 100 105
 Leu Thr Asp Ala Ile Ile Cys Ala Arg Lys Ile Val Lys Glu Thr
 110 115 120
 Gln Gly Met Asn Tyr Trp Gln Gly Trp Lys Lys His Cys Glu Gly
 125 130 135
 Arg Asp Leu Ser Glu Trp Lys Lys Gly Cys Glu Val Ser
 140 145

<210> 204
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 204
 gcaggctttg aggatgaagg ctgc 24

<210> 205
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 205
ctcattggct gcctggtcac aggc 24

<210> 206
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 206
ccagtcggac aggtctctcc cctc 24

<210> 207
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 207
tcagtgacca aggctgagca ggcg 24

<210> 208
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 208
ctacactcgt tgcaaactgg caaaaatatt ctcgagggt ggcctgg 47

<210> 209
<211> 1648
<212> DNA
<213> Homo sapiens

<400> 209
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ctttttacct Tggtgtctgc ctgtatccca gtgttcaggc Tggctagacg 200
ggggaagaag atcctatTTT actgtcactt cccagatctg cttctcacca 250

agagagattc ttttcttaaa cgactataca gggccccaat tgactggata 300
 gaggaatata ccacaggcat ggcagactgc atcttagtca acagccagtt 350
 cacagctgct gtttttaagg aacattcaa gtccctgtct cacatagacc 400
 ctgatgtcct ctatccatct ctaaagtca ccagcttga ctcagttggt 450
 cctgaaaagc tggatgacct agtccccaag gggaaaaaat tcctgctgct 500
 ctccatcaac agatacgaaa ggaagaaaaa tctgactttg gcactggaag 550
 ccctagtaca gctgcgtgga agattgacat cccaagattg ggagagggtt 600
 catctgatcg tggcaggtgg ttatgacgag agagtccctg agaatgtgga 650
 acattatcag gaattgaaga aaatggtcca acagtccgac cttggccagt 700
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 cacagctgca cgtgtgtgct ttacacacca agcaatgagc actttggcat 800
 tgtccctctg gaagccatgt acatgcagtg ccagtcatt gctgttaatt 850
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 tgtcattcca tgttcagcag agtattttta ttatattttc tcgggattat 1350
 tgctcttctg tctataaatt ttgaatgata ctgtgcctta attggttttc 1400
 atagtttaag tgtgtatcat tatcaaagtt gattaatttg gcttcatagt 1450
 ataatgagag cagggctatt gtagttccca gattcaatcc accgaagtgt 1500
 tcactgtcat ctgttaggga atttttgttt gtccctgtctt tgcctggatc 1550
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<210> 210

<211> 323

<212> PRT

<213> Homo sapiens

<400> 210

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Leu | Leu | Lys | Leu | Val | His | Gly | Ser | Pro | Leu | Val | Phe | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Glu | Lys | Phe | Lys | Leu | Phe | Thr | Leu | Val | Ser | Ala | Cys | Ile | Pro | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Arg | Leu | Ala | Arg | Arg | Arg | Lys | Lys | Ile | Leu | Phe | Tyr | Cys | His |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Pro | Asp | Leu | Leu | Leu | Thr | Lys | Arg | Asp | Ser | Phe | Leu | Lys | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Tyr | Arg | Ala | Pro | Ile | Asp | Trp | Ile | Glu | Glu | Tyr | Thr | Thr | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Met | Ala | Asp | Cys | Ile | Leu | Val | Asn | Ser | Gln | Phe | Thr | Ala | Ala | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Lys | Glu | Thr | Phe | Lys | Ser | Leu | Ser | His | Ile | Asp | Pro | Asp | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Tyr | Pro | Ser | Leu | Asn | Val | Thr | Ser | Phe | Asp | Ser | Val | Val | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Lys | Leu | Asp | Asp | Leu | Val | Pro | Lys | Gly | Lys | Lys | Phe | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Ser | Ile | Asn | Arg | Tyr | Glu | Arg | Lys | Lys | Asn | Leu | Thr | Leu | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Glu | Ala | Leu | Val | Gln | Leu | Arg | Gly | Arg | Leu | Thr | Ser | Gln | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Trp | Glu | Arg | Val | His | Leu | Ile | Val | Ala | Gly | Gly | Tyr | Asp | Glu | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Val | Leu | Glu | Asn | Val | Glu | His | Tyr | Gln | Glu | Leu | Lys | Lys | Met | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Gln | Ser | Asp | Leu | Gly | Gln | Tyr | Val | Thr | Phe | Leu | Arg | Ser | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Asp | Lys | Gln | Lys | Ile | Ser | Leu | Leu | His | Ser | Cys | Thr | Cys | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Tyr | Thr | Pro | Ser | Asn | Glu | His | Phe | Gly | Ile | Val | Pro | Leu | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Met | Tyr | Met | Gln | Cys | Pro | Val | Ile | Ala | Val | Asn | Ser | Gly | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Pro | Leu | Glu | Ser | Ile | Asp | His | Ser | Val | Thr | Gly | Phe | Leu | Cys | Glu |
| | | | | 260 | | | | | 265 | | | | | 270 |

Pro Asp Pro Val His Phe Ser Glu Ala Ile Glu Lys Phe Ile Arg
275 280 285

Glu Pro Ser Leu Lys Ala Thr Met Gly Leu Ala Gly Arg Ala Arg
290 295 300

Val Lys Glu Lys Phe Ser Pro Glu Ala Phe Thr Glu Gln Leu Tyr
305 310 315

Arg Tyr Val Thr Lys Leu Leu Val
320

<210> 211

<211> 1554

<212> DNA

<213> Homo sapiens

<400> 211

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tctacctcta tccggcttcc agacaagctg caggaattcc agggattact 150
ccaactgaag aaaaagatgg taatcttcca gatattgtga atagtggaag 200
tttgcatagag ttcttggtta atttgcatag gagatatggg cctgtggtct 250
ccttctgggtt tggcaggcgc ctcgttggtta gtttgggcac tgttgatgta 300
ctgaagcagc atatcaatcc caataagaca tcggaccctt ttgaaacat 350
gctgaagtca ttattaaggt atcaatctgg tgggtggcagt gtgagtgaag 400
accacatgag gaaaaaattg tatgaaaatg gtgtgactga ttctctgaag 450
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gctctcctac ccagagaccc agcacgtgcc cctcagccag catatgcttg 550
gttttgctat gaagtctggt acacagatgg taatgggtag tacatttgaa 600
gatgatcagg aagtcattcg cttccagaag aatcatggca cagtttggtc 650
tgagattgga aaaggctttc tagatgggtc acttgataaa aacatgactc 700
ggaaaaaaca atatgaagat gccctcatgc aactggagtc tgttttaagg 750
aacatcataa aagaacgaaa aggaaggaac ttcagtcaac atattttcat 800
tgactcctta gtacaaggga accttaatga ccaacagatc ctagaagaca 850
gtatgatatt ttctctggcc agttgcataa taactgcaaa attgtgtacc 900
tgggcaatct gttttttaac cacctctgaa gaagttcaaa aaaaattata 950
tgaagagata aaccaagttt ttggaaatgg tctgttact ccagagaaaa 1000

ttgagcagct cagatattgt cagcatgtgc tttgtgaaac tgttcgaact 1050
 gccaaactga ctccagtttc tgcccagctt caagatattg aaggaaaaat 1100
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 gatcgggttg atgatgaatt agtaatgaaa actttttcct cacttggatt 1250
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 cagtacttct tagtgtattg gtgaagagac tgcacctact ttctgtggag 1350
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 agcttggatc actgtctcaa agagatatta aaattttata catttaaaat 1450
 cattgttaaa ttgattgagg aaaacaacca tttaaaaaaa atctatgttg 1500
 aatcctttta taaaccagta tcactttgta atataaacac ctatttgtac 1550
 ttaa 1554

<210> 212

<211> 462

<212> PRT

<213> Homo sapiens

<400> 212

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asp | Phe | Ala | Ile | Phe | Ala | Val | Thr | Phe | Leu | Leu | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Gly | Ala | Val | Leu | Tyr | Leu | Tyr | Pro | Ala | Ser | Arg | Gln | Ala | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ile | Pro | Gly | Ile | Thr | Pro | Thr | Glu | Glu | Lys | Asp | Gly | Asn | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Asp | Ile | Val | Asn | Ser | Gly | Ser | Leu | His | Glu | Phe | Leu | Val | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | His | Glu | Arg | Tyr | Gly | Pro | Val | Val | Ser | Phe | Trp | Phe | Gly | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Leu | Val | Val | Ser | Leu | Gly | Thr | Val | Asp | Val | Leu | Lys | Gln | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Asn | Pro | Asn | Lys | Thr | Ser | Asp | Pro | Phe | Glu | Thr | Met | Leu | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Leu | Leu | Arg | Tyr | Gln | Ser | Gly | Gly | Gly | Ser | Val | Ser | Glu | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| His | Met | Arg | Lys | Lys | Leu | Tyr | Glu | Asn | Gly | Val | Thr | Asp | Ser | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Ser | Asn | Phe | Ala | Leu | Leu | Leu | Lys | Leu | Ser | Glu | Glu | Leu | Leu |

| | | | | | |
|-------------------------------------|-------------------------|--|-----|--|-----|
| | 140 | | 145 | | 150 |
| Asp Lys Trp Leu Ser Tyr Pro Glu Thr | Gln His Val Pro Leu Ser | | | | |
| 155 | 160 | | | | 165 |
| Gln His Met Leu Gly Phe Ala Met Lys | Ser Val Thr Gln Met Val | | | | |
| 170 | 175 | | | | 180 |
| Met Gly Ser Thr Phe Glu Asp Asp Gln | Glu Val Ile Arg Phe Gln | | | | |
| 185 | 190 | | | | 195 |
| Lys Asn His Gly Thr Val Trp Ser Glu | Ile Gly Lys Gly Phe Leu | | | | |
| 200 | 205 | | | | 210 |
| Asp Gly Ser Leu Asp Lys Asn Met Thr | Arg Lys Lys Gln Tyr Glu | | | | |
| 215 | 220 | | | | 225 |
| Asp Ala Leu Met Gln Leu Glu Ser Val | Leu Arg Asn Ile Ile Lys | | | | |
| 230 | 235 | | | | 240 |
| Glu Arg Lys Gly Arg Asn Phe Ser Gln | His Ile Phe Ile Asp Ser | | | | |
| 245 | 250 | | | | 255 |
| Leu Val Gln Gly Asn Leu Asn Asp Gln | Gln Ile Leu Glu Asp Ser | | | | |
| 260 | 265 | | | | 270 |
| Met Ile Phe Ser Leu Ala Ser Cys Ile | Ile Thr Ala Lys Leu Cys | | | | |
| 275 | 280 | | | | 285 |
| Thr Trp Ala Ile Cys Phe Leu Thr Thr | Ser Glu Glu Val Gln Lys | | | | |
| 290 | 295 | | | | 300 |
| Lys Leu Tyr Glu Glu Ile Asn Gln Val | Phe Gly Asn Gly Pro Val | | | | |
| 305 | 310 | | | | 315 |
| Thr Pro Glu Lys Ile Glu Gln Leu Arg | Tyr Cys Gln His Val Leu | | | | |
| 320 | 325 | | | | 330 |
| Cys Glu Thr Val Arg Thr Ala Lys Leu | Thr Pro Val Ser Ala Gln | | | | |
| 335 | 340 | | | | 345 |
| Leu Gln Asp Ile Glu Gly Lys Ile Asp | Arg Phe Ile Ile Pro Arg | | | | |
| 350 | 355 | | | | 360 |
| Glu Thr Leu Val Leu Tyr Ala Leu Gly | Val Val Leu Gln Asp Pro | | | | |
| 365 | 370 | | | | 375 |
| Asn Thr Trp Pro Ser Pro His Lys Phe | Asp Pro Asp Arg Phe Asp | | | | |
| 380 | 385 | | | | 390 |
| Asp Glu Leu Val Met Lys Thr Phe Ser | Ser Leu Gly Phe Ser Gly | | | | |
| 395 | 400 | | | | 405 |
| Thr Gln Glu Cys Pro Glu Leu Arg Phe | Ala Tyr Met Val Thr Thr | | | | |
| 410 | 415 | | | | 420 |
| Val Leu Leu Ser Val Leu Val Lys Arg | Leu His Leu Leu Ser Val | | | | |
| 425 | 430 | | | | 435 |

Glu Gly Gln Val Ile Glu Thr Lys Tyr Glu Leu Val Thr Ser Ser
440 445 450

Arg Glu Glu Ala Trp Ile Thr Val Ser Lys Arg Tyr
455 460

<210> 213
<211> 759
<212> DNA
<213> Homo sapiens

<400> 213
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cgtcacaccc ttattctggt cccgggacag caacatacag gcctgcctgc 200
ctctcacgtt ccccccgag gagtatgaca agcaggacat tcagctggtg 250
gcgcgcctct ctgtcacctt gggcctcttt gcagtggagc tggccggttt 300
cctctcagga gtctccatgt tcaacagcac ccagagcctc atctccattg 350
gggctcactg tagtgcattc gtggccctgt ccttcttcat attcgagcgt 400
tgggagtgca ctacgtattg gtacattttt gtcttctgca gtgcccttcc 450
agctgtcact gaaatggctt tttcgtcac cgtctttggg ctgaaaaaga 500
aacccttctg attaccttca tgacgggaac ctaaggacga agcctacagg 550
ggcaagggcc gcttcgtatt cctggaagaa ggaaggcata ggcttcggtt 600
ttccctctcg aaactgcttc tgctggagga tatgtgttg aataattacg 650
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tgttttgtag taacattaag acttatatac agtttttagg gacaattaa 750
aaaaaaaa 759

<210> 214
<211> 140
<212> PRT
<213> Homo sapiens

<400> 214
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Leu Ala His Leu Val Val Val Ile Thr Leu Phe Trp Ser Arg Asp
20 25 30
Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
35 40 45

Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
 50 55 60
 Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
 65 70 75
 Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
 80 85 90
 Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
 95 100 105
 Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
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 Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
 125 130 135
 Lys Lys Lys Pro Phe
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 <212> DNA
 <213> Homo sapiens

<400> 215
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 ggcatcagag tgcgcccagc acctgagcct gcccttacgc tatgtggtgg 200
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 <211> 196
 <212> PRT

<213> Homo sapiens

<400> 216

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          20           25           30

Ser Pro Ile Val Pro Arg Asn Glu Trp Lys Ala Leu Ala Ser Glu
          35           40           45

Cys Ala Gln His Leu Ser Leu Pro Leu Arg Tyr Val Val Val Ser
          50           55           60

His Thr Ala Gly Ser Ser Cys Asn Thr Pro Ala Ser Cys Gln Gln
          65           70           75

Gln Ala Arg Asn Val Gln His Tyr His Met Lys Thr Leu Gly Trp
          80           85           90

Cys Asp Val Gly Tyr Asn Phe Leu Ile Gly Glu Asp Gly Leu Val
          95          100          105

Tyr Glu Gly Arg Gly Trp Asn Phe Thr Gly Ala His Ser Gly His
          110          115          120

Leu Trp Asn Pro Met Ser Ile Gly Ile Ser Phe Met Gly Asn Tyr
          125          130          135

Met Asp Arg Val Pro Thr Pro Gln Ala Ile Arg Ala Ala Gln Gly
          140          145          150

Leu Leu Ala Cys Gly Val Ala Gln Gly Ala Leu Arg Ser Asn Tyr
          155          160          165

Val Leu Lys Gly His Arg Asp Val Gln Arg Thr Leu Ser Pro Gly
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Asn Gln Leu Tyr His Leu Ile Gln Asn Trp Pro His Tyr Arg Ser
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Pro

<210> 217

<211> 1871

<212> DNA

<213> Homo sapiens

<400> 217

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cctgagcgtg atgaccacga gggccagccc cggtcccggg tgcctcgga 200
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<210> 218

<211> 252

<212> PRT

<213> Homo sapiens

<400> 218

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gln | Leu | Thr | Arg | Cys | Cys | Phe | Val | Phe | Leu | Val | Gln | Gly | Ser | 1 | 5 | 10 | 15 |
| Leu | Tyr | Leu | Val | Ile | Cys | Gly | Gln | Asp | Asp | Gly | Pro | Pro | Gly | Ser | 20 | 25 | 30 | |
| Glu | Asp | Pro | Glu | Arg | Asp | Asp | His | Glu | Gly | Gln | Pro | Arg | Pro | Arg | 35 | 40 | 45 | |
| Val | Pro | Arg | Lys | Arg | Gly | His | Ile | Ser | Pro | Lys | Ser | Arg | Pro | Met | 50 | 55 | 60 | |
| Ala | Asn | Ser | Thr | Leu | Leu | Gly | Leu | Leu | Ala | Pro | Pro | Gly | Glu | Ala | 65 | 70 | 75 | |
| Trp | Gly | Ile | Leu | Gly | Gln | Pro | Pro | Asn | Arg | Pro | Asn | His | Ser | Pro | 80 | 85 | 90 | |
| Pro | Pro | Ser | Ala | Lys | Val | Lys | Lys | Ile | Phe | Gly | Trp | Gly | Asp | Phe | 95 | 100 | 105 | |
| Tyr | Ser | Asn | Ile | Lys | Thr | Val | Ala | Leu | Asn | Leu | Leu | Val | Thr | Gly | 110 | 115 | 120 | |
| Lys | Ile | Val | Asp | His | Gly | Asn | Gly | Thr | Phe | Ser | Val | His | Phe | Gln | 125 | 130 | 135 | |
| His | Asn | Ala | Thr | Gly | Gln | Gly | Asn | Ile | Ser | Ile | Ser | Leu | Val | Pro | 140 | 145 | 150 | |
| Pro | Ser | Lys | Ala | Val | Glu | Phe | His | Gln | Glu | Gln | Gln | Ile | Phe | Ile | 155 | 160 | 165 | |
| Glu | Ala | Lys | Ala | Ser | Lys | Ile | Phe | Asn | Cys | Arg | Met | Glu | Trp | Glu | 170 | 175 | 180 | |
| Lys | Val | Glu | Arg | Gly | Arg | Arg | Thr | Ser | Leu | Cys | Thr | His | Asp | Pro | 185 | 190 | 195 | |
| Ala | Lys | Ile | Cys | Ser | Arg | Asp | His | Ala | Gln | Ser | Ser | Ala | Thr | Trp | 200 | 205 | 210 | |

Ser Cys Ser Gln Pro Phe Lys Val Val Cys Val Tyr Ile Ala Phe
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Tyr Ser Thr Asp Tyr Arg Leu Val Gln Lys Val Cys Pro Asp Tyr
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Asn Tyr His Ser Asp Thr Pro Tyr Tyr Pro Ser Gly
245 250

<210> 219

<211> 2065

<212> DNA

<213> Homo sapiens

<400> 219

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<210> 220

<211> 201

<212> PRT

<213> Homo sapiens

<400> 220

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Thr Glu Pro Ile Val Leu Glu Gly Lys Cys Leu Val Val Cys Asp
 35 40 45

Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
 50 55 60

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Ile | Ser | Val | Arg | Ala | Ala | Asn | Ser | Lys | Val | Ala | Phe | Ser | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Arg | Ser | Thr | Asn | His | Glu | Pro | Ser | Glu | Met | Ser | Asn | Lys | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Arg | Ile | Ile | Tyr | Phe | Asp | Gln | Ile | Leu | Val | Asn | Val | Gly | Asn | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Phe | Thr | Leu | Glu | Ser | Val | Phe | Val | Ala | Pro | Arg | Lys | Gly | Ile | Tyr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Phe | Ser | Phe | His | Val | Ile | Lys | Val | Tyr | Gln | Ser | Gln | Thr | Ile | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gln | Val | Asn | Leu | Met | Leu | Asn | Gly | Lys | Pro | Val | Ile | Ser | Ala | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Gly | Asp | Lys | Asp | Val | Thr | Arg | Glu | Ala | Ala | Thr | Asn | Gly | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Leu | Tyr | Leu | Asp | Lys | Glu | Asp | Lys | Val | Tyr | Leu | Lys | Leu | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Gly | Asn | Leu | Val | Gly | Gly | Trp | Gln | Tyr | Ser | Thr | Phe | Ser | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Leu | Val | Phe | Pro | Leu | | | | | | | | | | |
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<210> 221
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 <213> Artificial

<220>
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 <223> Synthetic construct.

<400> 221
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<210> 222
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 222
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<210> 223
 <211> 40

<212> DNA
<213> Artificial

<220>
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<222> 1-40
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<210> 224
<211> 902
<212> DNA
<213> Homo sapiens

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ta 902

<210> 225
<211> 257
<212> PRT

<213> Homo sapiens

<400> 225

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Thr | Ala | Ala | Val | Phe | Phe | Gly | Cys | Ala | Phe | Ile | Ala | Phe | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Ala | Leu | Ala | Leu | Tyr | Val | Phe | Thr | Ile | Ala | Ile | Glu | Pro | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Arg | Ile | Ile | Phe | Leu | Ile | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Leu | Leu | Ile | Ser | Ser | Leu | Val | Trp | Phe | Met | Ala | Arg | Val | Ile | Ile | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asp | Asn | Lys | Asp | Gly | Pro | Thr | Gln | Lys | Tyr | Leu | Leu | Ile | Phe | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ala | Phe | Val | Ser | Val | Tyr | Ile | Gln | Glu | Met | Phe | Arg | Phe | Ala | Tyr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Ser | Glu | Gly | Leu | Lys | Ser | Ile | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Pro | Gly | Glu | Thr | Ala | Pro | Ser | Met | Arg | Leu | Leu | Ala | Tyr | Val | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Gly | Phe | Gly | Ile | Met | Ser | Gly | Val | Phe | Ser | Phe | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Leu | Ser | Asp | Ser | Leu | Gly | Pro | Gly | Thr | Val | Gly | Ile | His | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Ser | Pro | Gln | Phe | Phe | Leu | Tyr | Ser | Ala | Phe | Met | Thr | Leu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Ile | Leu | Leu | His | Val | Phe | Trp | Gly | Ile | Val | Phe | Phe | Asp | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Glu | Lys | Lys | Lys | Trp | Gly | Ile | Leu | Leu | Ile | Val | Leu | Leu | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| His | Leu | Leu | Val | Ser | Ala | Gln | Thr | Phe | Ile | Ser | Ser | Tyr | Tyr | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Asn | Leu | Ala | Ser | Ala | Phe | Ile | Ile | Leu | Val | Leu | Met | Gly | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Trp | Ala | Phe | Leu | Ala | Ala | Gly | Gly | Ser | Cys | Arg | Ser | Leu | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Leu | Leu | Cys | Gln | Asp | Lys | Asn | Phe | Leu | Leu | Tyr | Asn | Gln | Arg | |
| | | | | 245 | | | | | 250 | | | | | 255 | |

Ser Arg

<210> 226

<211> 3939
<212> DNA
<213> Homo sapiens

<400> 226

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<211> 832

<212> PRT

<213> Homo sapiens

<400> 227

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| Met | Phe | Ala | Leu | Gly | Leu | Pro | Phe | Leu | Val | Leu | Leu | Val | Ala | Ser |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Val | Glu | Ser | His | Leu | Gly | Val | Leu | Gly | Pro | Lys | Asn | Val | Ser | Gln |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Ala | Glu | Phe | Glu | Arg | Thr | Tyr | Val | Asp | Glu | Val | Asn | Ser | 35 | 40 | 45 |
| Glu | Leu | Val | Asn | Ile | Tyr | Thr | Phe | Asn | His | Thr | Val | Thr | Arg | Asn | 50 | 55 | 60 |
| Arg | Thr | Glu | Gly | Val | Arg | Val | Ser | Val | Asn | Val | Leu | Asn | Lys | Gln | 65 | 70 | 75 |
| Lys | Gly | Ala | Pro | Leu | Leu | Phe | Val | Val | Arg | Gln | Lys | Glu | Ala | Val | 80 | 85 | 90 |
| Val | Ser | Phe | Gln | Val | Pro | Leu | Ile | Leu | Arg | Gly | Met | Phe | Gln | Arg | 95 | 100 | 105 |
| Lys | Tyr | Leu | Tyr | Gln | Lys | Val | Glu | Arg | Thr | Leu | Cys | Gln | Pro | Pro | 110 | 115 | 120 |
| Thr | Lys | Asn | Glu | Ser | Glu | Ile | Gln | Phe | Phe | Tyr | Val | Asp | Val | Ser | 125 | 130 | 135 |
| Thr | Leu | Ser | Pro | Val | Asn | Thr | Thr | Tyr | Gln | Leu | Arg | Val | Ser | Arg | 140 | 145 | 150 |
| Met | Asp | Asp | Phe | Val | Leu | Arg | Thr | Gly | Glu | Gln | Phe | Ser | Phe | Asn | 155 | 160 | 165 |
| Thr | Thr | Ala | Ala | Gln | Pro | Gln | Tyr | Phe | Lys | Tyr | Glu | Phe | Pro | Glu | 170 | 175 | 180 |
| Gly | Val | Asp | Ser | Val | Ile | Val | Lys | Val | Thr | Ser | Asn | Lys | Ala | Phe | 185 | 190 | 195 |
| Pro | Cys | Ser | Val | Ile | Ser | Ile | Gln | Asp | Val | Leu | Cys | Pro | Val | Tyr | 200 | 205 | 210 |
| Asp | Leu | Asp | Asn | Asn | Val | Ala | Phe | Ile | Gly | Met | Tyr | Gln | Thr | Met | 215 | 220 | 225 |
| Thr | Lys | Lys | Ala | Ala | Ile | Thr | Val | Gln | Arg | Lys | Asp | Phe | Pro | Ser | 230 | 235 | 240 |
| Asn | Ser | Phe | Tyr | Val | Val | Val | Val | Val | Lys | Thr | Glu | Asp | Gln | Ala | 245 | 250 | 255 |
| Cys | Gly | Gly | Ser | Leu | Pro | Phe | Tyr | Pro | Phe | Ala | Glu | Asp | Glu | Pro | 260 | 265 | 270 |
| Val | Asp | Gln | Gly | His | Arg | Gln | Lys | Thr | Leu | Ser | Val | Leu | Val | Ser | 275 | 280 | 285 |
| Gln | Ala | Val | Thr | Ser | Glu | Ala | Tyr | Val | Ser | Gly | Met | Leu | Phe | Cys | 290 | 295 | 300 |
| Leu | Gly | Ile | Phe | Leu | Ser | Phe | Tyr | Leu | Leu | Thr | Val | Leu | Leu | Ala | 305 | 310 | 315 |
| Cys | Trp | Glu | Asn | Trp | Arg | Gln | Lys | Lys | Lys | Thr | Leu | Leu | Val | Ala | | | |

| 320 | 325 | 330 |
|-------------------------------------|-------------------------|-----|
| Ile Asp Arg Ala Cys Pro Glu Ser Gly | His Pro Arg Val Leu Ala | |
| 335 | 340 | 345 |
| Asp Ser Phe Pro Gly Ser Ser Pro Tyr | Glu Gly Tyr Asn Tyr Gly | |
| 350 | 355 | 360 |
| Ser Phe Glu Asn Val Ser Gly Ser Thr | Asp Gly Leu Val Asp Ser | |
| 365 | 370 | 375 |
| Ala Gly Thr Gly Asp Leu Ser Tyr Gly | Tyr Gln Gly Arg Ser Phe | |
| 380 | 385 | 390 |
| Glu Pro Val Gly Thr Arg Pro Arg Val | Asp Ser Met Ser Ser Val | |
| 395 | 400 | 405 |
| Glu Glu Asp Asp Tyr Asp Thr Leu Thr | Asp Ile Asp Ser Asp Lys | |
| 410 | 415 | 420 |
| Asn Val Ile Arg Thr Lys Gln Tyr Leu | Tyr Val Ala Asp Leu Ala | |
| 425 | 430 | 435 |
| Arg Lys Asp Lys Arg Val Leu Arg Lys | Lys Tyr Gln Ile Tyr Phe | |
| 440 | 445 | 450 |
| Trp Asn Ile Ala Thr Ile Ala Val Phe | Tyr Ala Leu Pro Val Val | |
| 455 | 460 | 465 |
| Gln Leu Val Ile Thr Tyr Gln Thr Val | Val Asn Val Thr Gly Asn | |
| 470 | 475 | 480 |
| Gln Asp Ile Cys Tyr Tyr Asn Phe Leu | Cys Ala His Pro Leu Gly | |
| 485 | 490 | 495 |
| Asn Leu Ser Ala Phe Asn Asn Ile Leu | Ser Asn Leu Gly Tyr Ile | |
| 500 | 505 | 510 |
| Leu Leu Gly Leu Leu Phe Leu Leu Ile | Ile Leu Gln Arg Glu Ile | |
| 515 | 520 | 525 |
| Asn His Asn Arg Ala Leu Leu Arg Asn | Asp Leu Cys Ala Leu Glu | |
| 530 | 535 | 540 |
| Cys Gly Ile Pro Lys His Phe Gly Leu | Phe Tyr Ala Met Gly Thr | |
| 545 | 550 | 555 |
| Ala Leu Met Met Glu Gly Leu Leu Ser | Ala Cys Tyr His Val Cys | |
| 560 | 565 | 570 |
| Pro Asn Tyr Thr Asn Phe Gln Phe Asp | Thr Ser Phe Met Tyr Met | |
| 575 | 580 | 585 |
| Ile Ala Gly Leu Cys Met Leu Lys Leu | Tyr Gln Lys Arg His Pro | |
| 590 | 595 | 600 |
| Asp Ile Asn Ala Ser Ala Tyr Ser Ala | Tyr Ala Cys Leu Ala Ile | |
| 605 | 610 | 615 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Ile | Phe | Phe | Ser | Val | Leu | Gly | Val | Val | Phe | Gly | Lys | Gly | Asn | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Thr | Ala | Phe | Trp | Ile | Val | Phe | Ser | Ile | Ile | His | Ile | Ile | Ala | Thr | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Leu | Leu | Leu | Ser | Thr | Gln | Leu | Tyr | Tyr | Met | Gly | Arg | Trp | Lys | Leu | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Asp | Ser | Gly | Ile | Phe | Arg | Arg | Ile | Leu | His | Val | Leu | Tyr | Thr | Asp | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Cys | Ile | Arg | Gln | Cys | Ser | Gly | Pro | Leu | Tyr | Val | Asp | Arg | Met | Val | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | Leu | Val | Met | Gly | Asn | Val | Ile | Asn | Trp | Ser | Leu | Ala | Ala | Tyr | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Gly | Leu | Ile | Met | Arg | Pro | Asn | Asp | Phe | Ala | Ser | Tyr | Leu | Leu | Ala | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ile | Gly | Ile | Cys | Asn | Leu | Leu | Leu | Tyr | Phe | Ala | Phe | Tyr | Ile | Ile | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Met | Lys | Leu | Arg | Ser | Gly | Glu | Arg | Ile | Lys | Leu | Ile | Pro | Leu | Leu | |
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| | | | | 755 | | | | | 760 | | | | | 765 | |
| Phe | Phe | Gln | Gly | Leu | Ser | Thr | Trp | Gln | Lys | Thr | Pro | Ala | Glu | Ser | |
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| Arg | Glu | His | Asn | Arg | Asp | Cys | Ile | Leu | Leu | Asp | Phe | Phe | Asp | Asp | |
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| His | Asp | Ile | Trp | His | Phe | Leu | Ser | Ser | Ile | Ala | Met | Phe | Gly | Ser | |
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| Phe | Leu | Val | Leu | Leu | Thr | Leu | Asp | Asp | Asp | Leu | Asp | Thr | Val | Gln | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
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<212> DNA

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ala | Ala | Pro | Leu | Glu | Leu | His | Val | Leu | Val | Met | Asp | Glu | Asn | 320 | 325 | 330 |
| Asp | Asn | Val | Pro | Ile | Cys | Pro | Pro | Arg | Asp | Pro | Thr | Val | Ser | Ile | 335 | 340 | 345 |
| Pro | Glu | Leu | Ser | Pro | Pro | Gly | Thr | Glu | Val | Thr | Arg | Leu | Ser | Ala | 350 | 355 | 360 |
| Glu | Asp | Ala | Asp | Ala | Pro | Gly | Ser | Pro | Asn | Ser | His | Val | Val | Tyr | 365 | 370 | 375 |
| Gln | Leu | Leu | Ser | Pro | Glu | Pro | Glu | Asp | Gly | Val | Glu | Gly | Arg | Ala | 380 | 385 | 390 |
| Phe | Gln | Val | Asp | Pro | Thr | Ser | Gly | Ser | Val | Thr | Leu | Gly | Val | Leu | 395 | 400 | 405 |
| Pro | Leu | Arg | Ala | Gly | Gln | Asn | Ile | Leu | Leu | Leu | Val | Leu | Ala | Met | 410 | 415 | 420 |
| Asp | Leu | Ala | Gly | Ala | Glu | Gly | Gly | Phe | Ser | Ser | Thr | Cys | Glu | Val | 425 | 430 | 435 |
| Glu | Val | Ala | Val | Thr | Asp | Ile | Asn | Asp | His | Ala | Pro | Glu | Phe | Ile | 440 | 445 | 450 |
| Thr | Ser | Gln | Ile | Gly | Pro | Ile | Ser | Leu | Pro | Glu | Asp | Val | Glu | Pro | 455 | 460 | 465 |
| Gly | Thr | Leu | Val | Ala | Met | Leu | Thr | Ala | Ile | Asp | Ala | Asp | Leu | Glu | 470 | 475 | 480 |
| Pro | Ala | Phe | Arg | Leu | Met | Asp | Phe | Ala | Ile | Glu | Arg | Gly | Asp | Thr | 485 | 490 | 495 |
| Glu | Gly | Thr | Phe | Gly | Leu | Asp | Trp | Glu | Pro | Asp | Ser | Gly | His | Val | 500 | 505 | 510 |
| Arg | Leu | Arg | Leu | Cys | Lys | Asn | Leu | Ser | Tyr | Glu | Ala | Ala | Pro | Ser | 515 | 520 | 525 |
| His | Glu | Val | Val | Val | Val | Val | Gln | Ser | Val | Ala | Lys | Leu | Val | Gly | 530 | 535 | 540 |
| Pro | Gly | Pro | Gly | Pro | Gly | Ala | Thr | Ala | Thr | Val | Thr | Val | Leu | Val | 545 | 550 | 555 |
| Glu | Arg | Val | Met | Pro | Pro | Pro | Lys | Leu | Asp | Gln | Glu | Ser | Tyr | Glu | 560 | 565 | 570 |
| Ala | Ser | Val | Pro | Ile | Ser | Ala | Pro | Ala | Gly | Ser | Phe | Leu | Leu | Thr | 575 | 580 | 585 |
| Ile | Gln | Pro | Ser | Asp | Pro | Ile | Ser | Arg | Thr | Leu | Arg | Phe | Ser | Leu | 590 | 595 | 600 |
| Val | Asn | Asp | Ser | Glu | Gly | Trp | Leu | Cys | Ile | Glu | Lys | Phe | Ser | Gly | | | |

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| 605 | 610 | 615 |
| Glu Val His Thr Ala Gln Ser Leu Gln Gly | Ala Gln Pro Gly Asp | |
| 620 | 625 | 630 |
| Thr Tyr Thr Val Leu Val Glu Ala Gln Asp | Thr Ala Leu Thr Leu | |
| 635 | 640 | 645 |
| Ala Pro Val Pro Ser Gln Tyr Leu Cys Thr | Pro Arg Gln Asp His | |
| 650 | 655 | 660 |
| Gly Leu Ile Val Ser Gly Pro Ser Lys Asp | Pro Asp Leu Ala Ser | |
| 665 | 670 | 675 |
| Gly His Gly Pro Tyr Ser Phe Thr Leu Gly | Pro Asn Pro Thr Val | |
| 680 | 685 | 690 |
| Gln Arg Asp Trp Arg Leu Gln Thr Leu Asn | Gly Ser His Ala Tyr | |
| 695 | 700 | 705 |
| Leu Thr Leu Ala Leu His Trp Val Glu Pro | Arg Glu His Ile Ile | |
| 710 | 715 | 720 |
| Pro Val Val Val Ser His Asn Ala Gln Met | Trp Gln Leu Leu Val | |
| 725 | 730 | 735 |
| Arg Val Ile Val Cys Arg Cys Asn Val Glu | Gly Gln Cys Met Arg | |
| 740 | 745 | 750 |
| Lys Val Gly Arg Met Lys Gly Met Pro Thr | Lys Leu Ser Ala Val | |
| 755 | 760 | 765 |
| Gly Ile Leu Val Gly Thr Leu Val Ala Ile | Gly Ile Phe Leu Ile | |
| 770 | 775 | 780 |
| Leu Ile Phe Thr His Trp Thr Met Ser Arg | Lys Lys Asp Pro Asp | |
| 785 | 790 | 795 |
| Gln Pro Ala Asp Ser Val Pro Leu Lys Ala | Thr Val | |
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<210> 233
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<213> Homo sapiens

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gatgtcctgg tcccatctgt cagtctgcag gcatttaa at ccttcctgag 250
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<210> 234

<211> 421

<212> PRT

<213> Homo sapiens

<400> 234

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Trp | Ile | Leu | Phe | Ile | Gly | Ala | Leu | Ile | Gly | Ser | Ser | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Gln | Glu | Lys | Phe | Phe | Gly | Asp | Gln | Val | Leu | Arg | Ile | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Arg | Asn | Gly | Asp | Glu | Ile | Ser | Lys | Leu | Ser | Gln | Leu | Val | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asn | Asn | Leu | Lys | Leu | Asn | Phe | Trp | Lys | Ser | Pro | Ser | Ser | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Arg | Pro | Val | Asp | Val | Leu | Val | Pro | Ser | Val | Ser | Leu | Gln | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Lys | Ser | Phe | Leu | Arg | Ser | Gln | Gly | Leu | Glu | Tyr | Ala | Val | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Glu | Asp | Leu | Gln | Ala | Leu | Leu | Asp | Asn | Glu | Asp | Asp | Glu | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | His | Asn | Glu | Gly | Gln | Glu | Arg | Ser | Ser | Asn | Asn | Phe | Asn | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Tyr | His | Ser | Leu | Glu | Ala | Ile | Tyr | His | Glu | Met | Asp | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Ala | Asp | Phe | Pro | Asp | Leu | Ala | Arg | Arg | Val | Lys | Ile | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Phe | Glu | Asn | Arg | Pro | Met | Tyr | Val | Leu | Lys | Phe | Ser | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Gly | Val | Arg | Arg | Pro | Ala | Val | Trp | Leu | Asn | Ala | Gly | Ile | 170 | 175 | 180 |
| His | Ser | Arg | Glu | Trp | Ile | Ser | Gln | Ala | Thr | Ala | Ile | Trp | Thr | Ala | 185 | 190 | 195 |
| Arg | Lys | Ile | Val | Ser | Asp | Tyr | Gln | Arg | Asp | Pro | Ala | Ile | Thr | Ser | 200 | 205 | 210 |
| Ile | Leu | Glu | Lys | Met | Asp | Ile | Phe | Leu | Leu | Pro | Val | Ala | Asn | Pro | 215 | 220 | 225 |
| Asp | Gly | Tyr | Val | Tyr | Thr | Gln | Thr | Gln | Asn | Arg | Leu | Trp | Arg | Lys | 230 | 235 | 240 |
| Thr | Arg | Ser | Arg | Asn | Pro | Gly | Ser | Ser | Cys | Ile | Gly | Ala | Asp | Pro | 245 | 250 | 255 |
| Asn | Arg | Asn | Trp | Asn | Ala | Ser | Phe | Ala | Gly | Lys | Gly | Ala | Ser | Asp | 260 | 265 | 270 |
| Asn | Pro | Cys | Ser | Glu | Val | Tyr | His | Gly | Pro | His | Ala | Asn | Ser | Glu | 275 | 280 | 285 |
| Val | Glu | Val | Lys | Ser | Val | Val | Asp | Phe | Ile | Gln | Lys | His | Gly | Asn | 290 | 295 | 300 |
| Phe | Lys | Gly | Phe | Ile | Asp | Leu | His | Ser | Tyr | Ser | Gln | Leu | Leu | Met | 305 | 310 | 315 |
| Tyr | Pro | Tyr | Gly | Tyr | Ser | Val | Lys | Lys | Ala | Pro | Asp | Ala | Glu | Glu | 320 | 325 | 330 |
| Leu | Asp | Lys | Val | Ala | Arg | Leu | Ala | Ala | Lys | Ala | Leu | Ala | Ser | Val | 335 | 340 | 345 |
| Ser | Gly | Thr | Glu | Tyr | Gln | Val | Gly | Pro | Thr | Cys | Thr | Thr | Val | Tyr | 350 | 355 | 360 |
| Pro | Ala | Ser | Gly | Ser | Ser | Ile | Asp | Trp | Ala | Tyr | Asp | Asn | Gly | Ile | 365 | 370 | 375 |
| Lys | Phe | Ala | Phe | Thr | Phe | Glu | Leu | Arg | Asp | Thr | Gly | Thr | Tyr | Gly | 380 | 385 | 390 |
| Phe | Leu | Leu | Pro | Ala | Asn | Gln | Ile | Ile | Pro | Thr | Ala | Glu | Glu | Thr | 395 | 400 | 405 |
| Trp | Leu | Gly | Leu | Lys | Thr | Ile | Met | Glu | His | Val | Arg | Asp | Asn | Leu | 410 | 415 | 420 |

Tyr

<210> 235
 <211> 1743
 <212> DNA
 <213> Homo sapiens

<400> 235

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gtttctaaag caaccacaa ggctgtgctg gatgtcagtg aagagggcac 1150
tgaggccaca gcagctacca ccaccaagt catagtccga tcgaaggatg 1200
gtccctctta cttcactgtc tccttcaata ggaccttct gatgatgatt 1250
acaaataaag ccacagacgg tattctcttt ctagggaaag tggaaaatcc 1300
cactaaatcc taggtgggaa atggcctgtt aactgatggc acattgctaa 1350
tgcacaagaa ataacaaacc acatccctct ttctgttctg aggggtgcatt 1400
tgaccccgat ggagctggat tcgctggcag ggatgccact tccaaggctc 1450

aatcaccaaa ccatcaacag ggacccagc cacaagccaa caccattaa 1500
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 ggatgttgct gggttaccat atttccattc cttggggctc ccaggaatgg 1600
 aaatacgcca acccagggtta ggcacctcta ttgcagaatt acaataaacac 1650
 attcaataaa actaaaatat gaattcaaaa aaaaaaaaaa aaaaaaaaaa 1700
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1743

<210> 236
 <211> 417
 <212> PRT
 <213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ser | Tyr | Leu | Tyr | Gly | Val | Leu | Phe | Ala | Val | Gly | Leu | Cys | 1 | 5 | 10 | 15 |
| Ala | Pro | Ile | Tyr | Cys | Val | Ser | Pro | Ala | Asn | Ala | Pro | Ser | Ala | Tyr | 20 | 25 | 30 | |
| Pro | Arg | Pro | Ser | Ser | Thr | Lys | Ser | Thr | Pro | Ala | Ser | Gln | Val | Tyr | 35 | 40 | 45 | |
| Ser | Leu | Asn | Thr | Asp | Phe | Ala | Phe | Arg | Leu | Tyr | Arg | Arg | Leu | Val | 50 | 55 | 60 | |
| Leu | Glu | Thr | Pro | Ser | Gln | Asn | Ile | Phe | Phe | Ser | Pro | Val | Ser | Val | 65 | 70 | 75 | |
| Ser | Thr | Ser | Leu | Ala | Met | Leu | Ser | Leu | Gly | Ala | His | Ser | Val | Thr | 80 | 85 | 90 | |
| Lys | Thr | Gln | Ile | Leu | Gln | Gly | Leu | Gly | Phe | Asn | Leu | Thr | His | Thr | 95 | 100 | 105 | |
| Pro | Glu | Ser | Ala | Ile | His | Gln | Gly | Phe | Gln | His | Leu | Val | His | Ser | 110 | 115 | 120 | |
| Leu | Thr | Val | Pro | Ser | Lys | Asp | Leu | Thr | Leu | Lys | Met | Gly | Ser | Ala | 125 | 130 | 135 | |
| Leu | Phe | Val | Lys | Lys | Glu | Leu | Gln | Leu | Gln | Ala | Asn | Phe | Leu | Gly | 140 | 145 | 150 | |
| Asn | Val | Lys | Arg | Leu | Tyr | Glu | Ala | Glu | Val | Phe | Ser | Thr | Asp | Phe | 155 | 160 | 165 | |
| Ser | Asn | Pro | Ser | Ile | Ala | Gln | Ala | Arg | Ile | Asn | Ser | His | Val | Lys | 170 | 175 | 180 | |
| Lys | Lys | Thr | Gln | Gly | Lys | Val | Val | Asp | Ile | Ile | Gln | Gly | Leu | Asp | 185 | 190 | 195 | |
| Leu | Leu | Thr | Ala | Met | Val | Leu | Val | Asn | His | Ile | Phe | Phe | Lys | Ala | | | | |

| 200 | 205 | 210 |
|-------------------------------------|-------------------------|-----|
| Lys Trp Glu Lys Pro Phe His Leu Glu | Tyr Thr Arg Lys Asn Phe | |
| 215 | 220 | 225 |
| Pro Phe Leu Val Gly Glu Gln Val Thr | Val Gln Val Pro Met Met | |
| 230 | 235 | 240 |
| His Gln Lys Glu Gln Phe Ala Phe Gly | Val Asp Thr Glu Leu Asn | |
| 245 | 250 | 255 |
| Cys Phe Val Leu Gln Met Asp Tyr Lys | Gly Asp Ala Val Ala Phe | |
| 260 | 265 | 270 |
| Phe Val Leu Pro Ser Lys Gly Lys Met | Arg Gln Leu Glu Gln Ala | |
| 275 | 280 | 285 |
| Leu Ser Ala Arg Thr Leu Ile Lys Trp | Ser His Ser Leu Gln Lys | |
| 290 | 295 | 300 |
| Arg Trp Ile Glu Val Phe Ile Pro Arg | Phe Ser Ile Ser Ala Ser | |
| 305 | 310 | 315 |
| Tyr Asn Leu Glu Thr Ile Leu Pro Lys | Met Gly Ile Gln Asn Ala | |
| 320 | 325 | 330 |
| Phe Asp Lys Asn Ala Asp Phe Ser Gly | Ile Ala Lys Arg Asp Ser | |
| 335 | 340 | 345 |
| Leu Gln Val Ser Lys Ala Thr His Lys | Ala Val Leu Asp Val Ser | |
| 350 | 355 | 360 |
| Glu Glu Gly Thr Glu Ala Thr Ala Ala | Thr Thr Thr Lys Phe Ile | |
| 365 | 370 | 375 |
| Val Arg Ser Lys Asp Gly Pro Ser Tyr | Phe Thr Val Ser Phe Asn | |
| 380 | 385 | 390 |
| Arg Thr Phe Leu Met Met Ile Thr Asn | Lys Ala Thr Asp Gly Ile | |
| 395 | 400 | 405 |
| Leu Phe Leu Gly Lys Val Glu Asn Pro | Thr Lys Ser | |
| 410 | 415 | |

<210> 237

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 237

caaccatgca aggacagggc agg 23

<210> 238

<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 238
ctttgctggtt ggcctctgtg ctcccaacca tgcaaggaca gggcagg 47

<210> 239
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 239
tgactcgggg tctccaaaac cagc 24

<210> 240
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 240
ggtataggcg gaaggcaaag tcgg 24

<210> 241
<211> 48
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-48
<223> Synthetic construct.

<400> 241
ggcatcttac ctttatggag tactctttgc tgttggcctc tgtgctcc 48

<210> 242
<211> 2436
<212> DNA
<213> Homo sapiens

<400> 242
ggctgaccgt gctacattgc ctggaggaag cctaaggaac ccaggcatcc 50

agctgcccac gcctgagtc aagattcttc ccaggaacac aaacgtagga 100
 gacccacgct cctggaagca ccagccttta tctcttcacc ttcaagtccc 150
 ctttctcaag aatcctctgt tctttgccct ctaaagtctt ggtacatcta 200
 ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgcag 250
 aaaggaaatg ttctccttat gtttgggtcta ctattgcatt tagaagctgc 300
 aacaaattcc aatgagacta gcacctctgc caaacttgga tccagtgtga 350
 tctccagtgg agccagcaca gccaccaact ctgggtccag tgtgacctcc 400
 agtggggtca gcacagccac catctcaggg tccagcgtga cctccaatgg 450
 ggtcagcata gtcaccaact ctgagttcca tacaacctcc agtgggatca 500
 gcacagccac caactctgag ttcagcacag cgtccagtgg gatcagcata 550
 gccaccaact ctgagtccag cacaacctcc agtggggcca gcacagccac 600
 caactctgag tccagcacac cctccagtgg ggccagcaca gtcaccaact 650
 ctgggtccag tgtgacctcc agtggagcca gactgccac caactctgag 700
 tccagcacag tgtccagtag ggccagcact gccaccaact ctgagtctag 750
 cacactctcc agtggggcca gcacagccac caactctgac tccagcaca 800
 cctccagtgg ggctagcaca gccaccaact ctgagtccag cacaacctcc 850
 agtggggcca gcacagccac caactctgag tccagcacag tgtccagtag 900
 ggccagcact gccaccaact ctgagtccag cacaacctcc agtggggcca 950
 gcacagccac caactctgag tccagaacga cctccaatgg ggctggcaca 1000
 gccaccaact ctgagtccag cacgacctcc agtggggcca gcacagccac 1050
 caactctgac tccagcacag tgtccagtgg ggccagcact gccaccaact 1100
 ctgagtccag cacgacctcc agtggggcca gcacagccac caactctgag 1150
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 cacaacctcc agtggggccg gcacagccac caactctgag tccagcacag 1250
 tgtccagtgg gatcagcaca gtcaccaatt ctgagtccag cacacctcc 1300
 agtggggcca acacagccac caactctgag tccagtacga cctccagtgg 1350
 ggccaacaca gccaccaact ctgagtccag cacagtgtcc agtggggcca 1400
 gactgccac caactctgag tccagcaca cctccagtgg ggtcagcaca 1450
 gccaccaact ctgagtccag cacaacctcc agtggggcta gcacagccac 1500

caactctgac tccagcacia cctccagtga ggccagcaca gccaccaact 1550
 ctgagtctag cacagtgtcc agtgggatca gcacagtcac caattctgag 1600
 tccagcacia cctccagtgg ggccaacaca gccaccaact ctgggtccag 1650
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 cttcccatag tgcattctact gcagtgagtg aggcaaagcc tgggtgggtcc 1750
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 cgtgggggctc tttgctgggc tcttcttctg tgtgagaaac agcctgtccc 1850
 tgagaaacac ctttaacaca gctgtctacc accctcatgg cctcaaccat 1900
 ggccttggtc caggccctgg agggaaatcat ggagcccccc acaggcccag 1950
 gtggagtcct aactggttct ggaggagacc agtatcatcg atagccatgg 2000
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 gcattcttca ggaaggaaga gacctgggca cccaagacct ggtttccttt 2100
 cattcatccc aggagacccc tcccagcttt gtttgagatc ctgaaaatct 2150
 tgaagaaggt attcctcacc tttcttgctt ttaccagaca ctggaaagag 2200
 aatactatat tgctcattta gctaagaaat aaatacatct catctaacac 2250
 acacgacaaa gagaagctgt gcttgccccg ggggtgggtat ctagctctga 2300
 gatgaactca gttataggag aaaacctcca tgctggactc catctggcat 2350
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2436

<210> 243

<211> 596

<212> PRT

<213> Homo sapiens

<400> 243

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Met | Gln | Lys | Gly | Asn | Val | Leu | Leu | Met | Phe | Gly | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | His | Leu | Glu | Ala | Ala | Thr | Asn | Ser | Asn | Glu | Thr | Ser | Thr | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Asn | Thr | Gly | Ser | Ser | Val | Ile | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ser | Gly | Val | Ser | Thr | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Ile | Ser | Gly | Ser | Ser | Val | Thr | Ser | Asn | Gly | Val | Ser | Ile | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Ser | Glu | Phe | His | Thr | Thr | Ser | Ser | Gly | Ile | Ser | Thr | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Asn | Ser | Glu | Phe | Ser | Thr | Ala | Ser | Ser | Gly | Ile | Ser | Ile | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Gly | Ala | Ser | Thr | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Arg | Ala | Ser | Thr | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Leu | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Arg | Ala | Ser | Thr | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Asn | Ser | Glu | Ser | Arg | Thr | Thr | Ser | Asn | Gly | Ala | Gly | Thr | Ala |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Gly | Thr | Ala |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ile | Ser | Thr | Val |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Gly | Ala | Asn | Thr | Ala |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Asn | Thr | Ala |

| | 365 | | 370 | | 375 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| Thr Asn Ser Glu | Ser Ser Thr Val Ser | Ser Ser Gly Ala Ser Thr | Ala | | |
| | 380 | | 385 | | 390 |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Ser Gly Val Ser Thr | Ala | | |
| | 395 | | 400 | | 405 |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Ser Gly Ala Ser Thr | Ala | | |
| | 410 | | 415 | | 420 |
| Thr Asn Ser Asp | Ser Ser Thr Thr Ser | Ser Ser Glu Ala Ser Thr | Ala | | |
| | 425 | | 430 | | 435 |
| Thr Asn Ser Glu | Ser Ser Thr Val Ser | Ser Ser Gly Ile Ser Thr | Val | | |
| | 440 | | 445 | | 450 |
| Thr Asn Ser Glu | Ser Ser Thr Thr Ser | Ser Ser Gly Ala Asn Thr | Ala | | |
| | 455 | | 460 | | 465 |
| Thr Asn Ser Gly | Ser Ser Val Thr Ser | Ala Gly Ser Gly Thr | Ala | | |
| | 470 | | 475 | | 480 |
| Ala Leu Thr Gly | Met His Thr Thr Ser | His Ser Ala Ser Thr | Ala | | |
| | 485 | | 490 | | 495 |
| Val Ser Glu Ala | Lys Pro Gly Gly Ser | Leu Val Pro Trp Glu | Ile | | |
| | 500 | | 505 | | 510 |
| Phe Leu Ile Thr | Leu Val Ser Val Val | Ala Ala Val Gly Leu | Phe | | |
| | 515 | | 520 | | 525 |
| Ala Gly Leu Phe | Phe Cys Val Arg Asn | Ser Leu Ser Leu Arg | Asn | | |
| | 530 | | 535 | | 540 |
| Thr Phe Asn Thr | Ala Val Tyr His Pro | His Gly Leu Asn His | Gly | | |
| | 545 | | 550 | | 555 |
| Leu Gly Pro Gly | Pro Gly Gly Asn His | Gly Ala Pro His Arg | Pro | | |
| | 560 | | 565 | | 570 |
| Arg Trp Ser Pro | Asn Trp Phe Trp Arg | Arg Pro Val Ser Ser | Ile | | |
| | 575 | | 580 | | 585 |
| Ala Met Glu Met | Ser Gly Arg Asn Ser | Gly Pro | | | |
| | 590 | | 595 | | |

<210> 244

<211> 26

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-26

<223> Synthetic construct.

<400> 244

gaagcaccag cctttatctc ttcacc 26

<210> 245

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic sequence.

<400> 245

gtcagagttg gtggctgtgc tagc 24

<210> 246

<211> 48

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-48

<223> Synthetic construct.

<400> 246

ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgc 48

<210> 247

<211> 957

<212> DNA

<213> Homo sapiens

<400> 247

gggagagagg ataaatagca gcgtggcttc cctggctcct ctctgcatcc 50

ttcccgacct tcccagcaat atgcatcttg cacgtctggt cggctcctgc 100

tccctccttc tgctactggg ggccctgtct ggatgggcgg ccagcgatga 150

ccccattgag aaggctattg aagggatcaa ccgagggctg agcaatgcag 200

agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250

gccggaaggg aagtggagaa ggttttcaac ggacttagca acatggggag 300

ccacaccggc aaggagttgg acaaaggcgt ccaggggctc aaccacggca 350

tggacaaggt tgcccatgag atcaaccatg gtattggaca agcaggaaag 400

gaagcagaga agcttggcca tgggggtcaac aacgctgctg gacaggccgg 450

gaaggaagca gacaaagcgg tccaagggtt ccacactggg gtccaccagg 500

ctgggaagga agcagagaaa cttggccaag gggtaacca tgctgctgac 550

caggctggaa aggaagtgga gaagcttggc caaggtgccc accatgctgc 600

tggccaggcc gggaaggagc tgcagaatgc tcataatggg gtcaaccaag 650
 ccagcaagga ggccaaccag ctgctgaatg gcaaccatca aagcggatct 700
 tccagccatc aaggaggggc cacaaccacg ccgttagcct ctggggcctc 750
 agtcaacacg cctttcatca accttcccgc cctgtggagg agcgtcgcca 800
 acatcatgcc ctaaactggc atccggcctt gctgggagaa taatgtcgcc 850
 gttgtcacat cagctgacat gacctggagg ggttgggggt gggggacagg 900
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 tacacca 957

<210> 248

<211> 247

<212> PRT

<213> Homo sapiens

<400> 248

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | His | Leu | Ala | Arg | Leu | Val | Gly | Ser | Cys | Ser | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Ala | Leu | Ser | Gly | Trp | Ala | Ala | Ser | Asp | Asp | Pro | Ile | Glu | 20 | 25 | 30 | |
| Lys | Val | Ile | Glu | Gly | Ile | Asn | Arg | Gly | Leu | Ser | Asn | Ala | Glu | Arg | 35 | 40 | 45 | |
| Glu | Val | Gly | Lys | Ala | Leu | Asp | Gly | Ile | Asn | Ser | Gly | Ile | Thr | His | 50 | 55 | 60 | |
| Ala | Gly | Arg | Glu | Val | Glu | Lys | Val | Phe | Asn | Gly | Leu | Ser | Asn | Met | 65 | 70 | 75 | |
| Gly | Ser | His | Thr | Gly | Lys | Glu | Leu | Asp | Lys | Gly | Val | Gln | Gly | Leu | 80 | 85 | 90 | |
| Asn | His | Gly | Met | Asp | Lys | Val | Ala | His | Glu | Ile | Asn | His | Gly | Ile | 95 | 100 | 105 | |
| Gly | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | Leu | Gly | His | Gly | Val | Asn | 110 | 115 | 120 | |
| Asn | Ala | Ala | Gly | Gln | Ala | Gly | Lys | Glu | Ala | Asp | Lys | Ala | Val | Gln | 125 | 130 | 135 | |
| Gly | Phe | His | Thr | Gly | Val | His | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | 140 | 145 | 150 | |
| Leu | Gly | Gln | Gly | Val | Asn | His | Ala | Ala | Asp | Gln | Ala | Gly | Lys | Glu | 155 | 160 | 165 | |
| Val | Glu | Lys | Leu | Gly | Gln | Gly | Ala | His | His | Ala | Ala | Gly | Gln | Ala | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Glu | Leu | Gln | Asn | Ala | His | Asn | Gly | Val | Asn | Gln | Ala | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Glu | Ala | Asn | Gln | Leu | Leu | Asn | Gly | Asn | His | Gln | Ser | Gly | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Ser | His | Gln | Gly | Gly | Ala | Thr | Thr | Thr | Pro | Leu | Ala | Ser | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ser | Val | Asn | Thr | Pro | Phe | Ile | Asn | Leu | Pro | Ala | Leu | Trp | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Val | Ala | Asn | Ile | Met | Pro | | | | | | | | |
| | | | | 245 | | | | | | | | | | |

<210> 249

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 249

caatatgcat cttgcacgtc tgg 23

<210> 250

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 250

aagcttctct gcttcctttc ctgc 24

<210> 251

<211> 43

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-43

<223> Synthetic construct.

<400> 251

tgacccatt gagaaggatc ttgaaggat caaccgagg ctg 43

<210> 252

<211> 3781

<212> DNA

<213> Homo sapiens

<400> 252

ctccgggtcc ccaggggctg cgccgggccg gcctggcaag ggggacgagt 50
cagtggacac tccaggaaga gcggcccccgc ggggggcgat gaccgtgcgc 100
tgacctgac tactccagg tccggaggcg ggggcccccg gggcgactcg 150
ggggcggaac gcggggcgga gctgccgcc gtgagtccgg ccgagccacc 200
tgagcccgag ccgcgggaca ccgtcgtcc tgctctccga atgctgcgca 250
ccgcgatggg cctgaggagc tggctcgccg ccccatgggg cgcgctgccg 300
cctcggccac cgctgctgct gctcctgctg ctgctgctcc tgctgcagcc 350
gccgcctccg acctgggcgc tcagcccccg gatcagcctg cctctgggct 400
ctgaagagcg gccattcctc agattcgaag ctgaacacat ctccaactac 450
acagcccttc tgctgagcag ggatggcagg accctgtacg tgggtgctcg 500
agaggccctc tttgcaactca gtagcaacct cagcttcctg ccaggcgggg 550
agtaccagga gctgctttgg ggtgcagacg cagagaagaa acagcagtgc 600
agcttcaagg gcaaggacct acagcgcgac tgtcaaaact acatcaagat 650
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| Trp | Gly | Ala | Leu | Pro | Pro | Arg | Pro | Pro | Leu | Leu | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Pro | Pro | Thr | Trp | Ala | Leu | Ser |
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| Arg | Phe | Glu | Ala | Glu | His | Ile | Ser | Asn | Tyr | Thr | Ala | Leu | Leu | Leu |
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| Ser | Arg | Asp | Gly | Arg | Thr | Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Leu |

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| Lys | Ile | Leu | Leu | Pro | Leu | Ser | Gly | Ser | His | Leu | Phe | Thr | Cys | Gly | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Thr | Ala | Ala | Phe | Ser | Pro | Met | Cys | Thr | Tyr | Ile | Asn | Met | Glu | Asn | | | | | |
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| Phe | Thr | Leu | Ala | Arg | Asp | Glu | Lys | Gly | Asn | Val | Leu | Leu | Glu | Asp | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | Lys | Gly | Arg | Cys | Pro | Phe | Asp | Pro | Asn | Phe | Lys | Ser | Thr | Ala | | | | | |
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| Leu | Val | Val | Asp | Gly | Glu | Leu | Tyr | Thr | Gly | Thr | Val | Ser | Ser | Phe | | | | | |
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| Gln | Gly | Asn | Asp | Pro | Ala | Ile | Ser | Arg | Ser | Gln | Ser | Leu | Arg | Pro | | | | | |
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| Thr | Lys | Thr | Glu | Ser | Ser | Leu | Asn | Trp | Leu | Gln | Asp | Pro | Ala | Phe | | | | | |
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| Asp | Asp | Asp | Lys | Ile | Tyr | Phe | Phe | Phe | Ser | Glu | Thr | Gly | Gln | Glu | | | | | |
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| Phe | Glu | Phe | Phe | Glu | Asn | Thr | Ile | Val | Ser | Arg | Ile | Ala | Arg | Ile | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Cys | Lys | Gly | Asp | Glu | Gly | Gly | Glu | Arg | Val | Leu | Gln | Gln | Arg | Trp | | | | | |
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| Thr | Ser | Phe | Leu | Lys | Ala | Gln | Leu | Leu | Cys | Ser | Arg | Pro | Asp | Asp | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
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| Glu Val Asn Arg | Glu Thr Gln Gln Trp | Tyr Thr Val Thr His Pro | 380 | 385 | 390 |
| Val Pro Thr Pro | Arg Pro Gly Ala Cys | Ile Thr Asn Ser Ala Arg | 395 | 400 | 405 |
| Glu Arg Lys Ile | Asn Ser Ser Leu Gln | Leu Pro Asp Arg Val Leu | 410 | 415 | 420 |
| Asn Phe Leu Lys | Asp His Phe Leu Met | Asp Gly Gln Val Arg Ser | 425 | 430 | 435 |
| Arg Met Leu Leu | Leu Gln Pro Gln Ala | Arg Tyr Gln Arg Val Ala | 440 | 445 | 450 |
| Val His Arg Val | Pro Gly Leu His His | Thr Tyr Asp Val Leu Phe | 455 | 460 | 465 |
| Leu Gly Thr Gly | Asp Gly Arg Leu His | Lys Ala Val Ser Val Gly | 470 | 475 | 480 |
| Pro Arg Val His | Ile Ile Glu Glu Leu | Gln Ile Phe Ser Ser Gly | 485 | 490 | 495 |
| Gln Pro Val Gln | Asn Leu Leu Leu Asp | Thr His Arg Gly Leu Leu | 500 | 505 | 510 |
| Tyr Ala Ala Ser | His Ser Gly Val Val | Gln Val Pro Met Ala Asn | 515 | 520 | 525 |
| Cys Ser Leu Tyr | Arg Ser Cys Gly Asp | Cys Leu Leu Ala Arg Asp | 530 | 535 | 540 |
| Pro Tyr Cys Ala | Trp Ser Gly Ser Ser | Cys Lys His Val Ser Leu | 545 | 550 | 555 |
| Tyr Gln Pro Gln | Leu Ala Thr Arg Pro | Trp Ile Gln Asp Ile Glu | 560 | 565 | 570 |
| Gly Ala Ser Ala | Lys Asp Leu Cys Ser | Ala Ser Ser Val Val Ser | 575 | 580 | 585 |
| Pro Ser Phe Val | Pro Thr Gly Glu Lys | Pro Cys Glu Gln Val Gln | 590 | 595 | 600 |
| Phe Gln Pro Asn | Thr Val Asn Thr Leu | Ala Cys Pro Leu Leu Ser | 605 | 610 | 615 |
| Asn Leu Ala Thr | Arg Leu Trp Leu Arg | Asn Gly Ala Pro Val Asn | 620 | 625 | 630 |
| Ala Ser Ala Ser | Cys His Val Leu Pro | Thr Gly Asp Leu Leu Leu | 635 | 640 | 645 |
| Val Gly Thr Gln | Gln Leu Gly Glu Phe | Gln Cys Trp Ser Leu Glu | 650 | 655 | 660 |
| Glu Gly Phe Gln | Gln Leu Val Ala Ser | Tyr Cys Pro Glu Val Val | | | |

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|-----------------|---------------------|-------------------------|
| 665 | 670 | 675 |
| Glu Asp Gly Val | Ala Asp Gln Thr Asp | Glu Gly Gly Ser Val Pro |
| 680 | 685 | 690 |
| Val Ile Ile Ser | Thr Ser Arg Val Ser | Ala Pro Ala Gly Gly Lys |
| 695 | 700 | 705 |
| Ala Ser Trp Gly | Ala Asp Arg Ser Tyr | Trp Lys Glu Phe Leu Val |
| 710 | 715 | 720 |
| Met Cys Thr Leu | Phe Val Leu Ala Val | Leu Leu Pro Val Leu Phe |
| 725 | 730 | 735 |
| Leu Leu Tyr Arg | His Arg Asn Ser Met | Lys Val Phe Leu Lys Gln |
| 740 | 745 | 750 |
| Gly Glu Cys Ala | Ser Val His Pro Lys | Thr Cys Pro Val Val Leu |
| 755 | 760 | 765 |
| Pro Pro Glu Thr | Arg Pro Leu Asn Gly | Leu Gly Pro Pro Ser Thr |
| 770 | 775 | 780 |
| Pro Leu Asp His | Arg Gly Tyr Gln Ser | Leu Ser Asp Ser Pro Pro |
| 785 | 790 | 795 |
| Gly Ala Arg Val | Phe Thr Glu Ser Glu | Lys Arg Pro Leu Ser Ile |
| 800 | 805 | 810 |
| Gln Asp Ser Phe | Val Glu Val Ser Pro | Val Cys Pro Arg Pro Arg |
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ccagtgaaca atatttttct attgtacttt tcgaaccatt ttgtctcatt 4500

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aaacacgaaa aaa 4563

<210> 260

<211> 802

<212> PRT

<213> Homo sapiens

<400> 260

Met Ala Ala Arg Gly Arg Arg Ala Trp Leu Ser Val Leu Leu Gly
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20 25 30

Ala Ser Glu Leu Lys Arg Ala Gly Pro Arg Arg Arg Ala Ser Pro
35 40 45

Glu Gly Cys Arg Ser Gly Gln Ala Ala Ala Ser Gln Ala Gly Gly
50 55 60

Ala Arg Gly Asp Ala Arg Gly Ala Gln Leu Trp Pro Pro Gly Ser
65 70 75

Asp Pro Asp Gly Gly Pro Arg Asp Arg Asn Phe Leu Phe Val Gly
80 85 90

Val Met Thr Ala Gln Lys Tyr Leu Gln Thr Arg Ala Val Ala Ala
95 100 105

Tyr Arg Thr Trp Ser Lys Thr Ile Pro Gly Lys Val Gln Phe Phe
110 115 120

Ser Ser Glu Gly Ser Asp Thr Ser Val Pro Ile Pro Val Val Pro
125 130 135

Leu Arg Gly Val Asp Asp Ser Tyr Pro Pro Gln Lys Lys Ser Phe
140 145 150

Met Met Leu Lys Tyr Met His Asp His Tyr Leu Asp Lys Tyr Glu
155 160 165

Trp Phe Met Arg Ala Asp Asp Asp Val Tyr Ile Lys Gly Asp Arg
170 175 180

Leu Glu Asn Phe Leu Arg Ser Leu Asn Ser Ser Glu Pro Leu Phe
185 190 195

Leu Gly Gln Thr Gly Leu Gly Thr Thr Glu Glu Met Gly Lys Leu
200 205 210

Ala Leu Glu Pro Gly Glu Asn Phe Cys Met Gly Gly Pro Gly Val
215 220 225

Ile Met Ser Arg Glu Val Leu Arg Arg Met Val Pro His Ile Gly
230 235 240

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Cys | Leu | Arg | Glu | Met | Tyr | Thr | Thr | His | Glu | Asp | Val | Glu | Val | 245 | 250 | 255 |
| Gly | Arg | Cys | Val | Arg | Arg | Phe | Ala | Gly | Val | Gln | Cys | Val | Trp | Ser | 260 | 265 | 270 |
| Tyr | Glu | Met | Arg | Gln | Leu | Phe | Tyr | Glu | Asn | Tyr | Glu | Gln | Asn | Lys | 275 | 280 | 285 |
| Lys | Gly | Tyr | Ile | Arg | Asp | Leu | His | Asn | Ser | Lys | Ile | His | Gln | Ala | 290 | 295 | 300 |
| Ile | Thr | Leu | His | Pro | Asn | Lys | Asn | Pro | Pro | Tyr | Gln | Tyr | Arg | Leu | 305 | 310 | 315 |
| His | Ser | Tyr | Met | Leu | Ser | Arg | Lys | Ile | Ser | Glu | Leu | Arg | His | Arg | 320 | 325 | 330 |
| Thr | Ile | Gln | Leu | His | Arg | Glu | Ile | Val | Leu | Met | Ser | Lys | Tyr | Ser | 335 | 340 | 345 |
| Asn | Thr | Glu | Ile | His | Lys | Glu | Asp | Leu | Gln | Leu | Gly | Ile | Pro | Pro | 350 | 355 | 360 |
| Ser | Phe | Met | Arg | Phe | Gln | Pro | Arg | Gln | Arg | Glu | Glu | Ile | Leu | Glu | 365 | 370 | 375 |
| Trp | Glu | Phe | Leu | Thr | Gly | Lys | Tyr | Leu | Tyr | Ser | Ala | Val | Asp | Gly | 380 | 385 | 390 |
| Gln | Pro | Pro | Arg | Arg | Gly | Met | Asp | Ser | Ala | Gln | Arg | Glu | Ala | Leu | 395 | 400 | 405 |
| Asp | Asp | Ile | Val | Met | Gln | Val | Met | Glu | Met | Ile | Asn | Ala | Asn | Ala | 410 | 415 | 420 |
| Lys | Thr | Arg | Gly | Arg | Ile | Ile | Asp | Phe | Lys | Glu | Ile | Gln | Tyr | Gly | 425 | 430 | 435 |
| Tyr | Arg | Arg | Val | Asn | Pro | Met | Tyr | Gly | Ala | Glu | Tyr | Ile | Leu | Asp | 440 | 445 | 450 |
| Leu | Leu | Leu | Leu | Tyr | Lys | Lys | His | Lys | Gly | Lys | Lys | Met | Thr | Val | 455 | 460 | 465 |
| Pro | Val | Arg | Arg | His | Ala | Tyr | Leu | Gln | Gln | Thr | Phe | Ser | Lys | Ile | 470 | 475 | 480 |
| Gln | Phe | Val | Glu | His | Glu | Glu | Leu | Asp | Ala | Gln | Glu | Leu | Ala | Lys | 485 | 490 | 495 |
| Arg | Ile | Asn | Gln | Glu | Ser | Gly | Ser | Leu | Ser | Phe | Leu | Ser | Asn | Ser | 500 | 505 | 510 |
| Leu | Lys | Lys | Leu | Val | Pro | Phe | Gln | Leu | Pro | Gly | Ser | Lys | Ser | Glu | 515 | 520 | 525 |
| His | Lys | Glu | Pro | Lys | Asp | Lys | Lys | Ile | Asn | Ile | Leu | Ile | Pro | Leu | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 530 | | 535 | | 540 |
| Ser Gly Arg Phe | Asp Met Phe Val Arg | Phe Met Gly Asn Phe | Glu | | |
| | 545 | 550 | 555 | | |
| Lys Thr Cys Leu | Ile Pro Asn Gln Asn | Val Lys Leu Val Val | Leu | | |
| | 560 | 565 | 570 | | |
| Leu Phe Asn Ser | Asp Ser Asn Pro Asp | Lys Ala Lys Gln Val | Glu | | |
| | 575 | 580 | 585 | | |
| Leu Met Arg Asp | Tyr Arg Ile Lys Tyr | Pro Lys Ala Asp Met | Gln | | |
| | 590 | 595 | 600 | | |
| Ile Leu Pro Val | Ser Gly Glu Phe Ser | Arg Ala Leu Ala Leu | Glu | | |
| | 605 | 610 | 615 | | |
| Val Gly Ser Ser | Gln Phe Asn Asn Glu | Ser Leu Leu Phe Phe | Cys | | |
| | 620 | 625 | 630 | | |
| Asp Val Asp Leu | Val Phe Thr Thr Glu | Phe Leu Gln Arg Cys | Arg | | |
| | 635 | 640 | 645 | | |
| Ala Asn Thr Val | Leu Gly Gln Gln Ile | Tyr Phe Pro Ile Ile | Phe | | |
| | 650 | 655 | 660 | | |
| Ser Gln Tyr Asp | Pro Lys Ile Val Tyr | Ser Gly Lys Val Pro | Ser | | |
| | 665 | 670 | 675 | | |
| Asp Asn His Phe | Ala Phe Thr Gln Lys | Thr Gly Phe Trp Arg | Asn | | |
| | 680 | 685 | 690 | | |
| Tyr Gly Phe Gly | Ile Thr Cys Ile Tyr | Lys Gly Asp Leu Val | Arg | | |
| | 695 | 700 | 705 | | |
| Val Gly Gly Phe | Asp Val Ser Ile Gln | Gly Trp Gly Leu Glu | Asp | | |
| | 710 | 715 | 720 | | |
| Val Asp Leu Phe | Asn Lys Val Val Gln | Ala Gly Leu Lys Thr | Phe | | |
| | 725 | 730 | 735 | | |
| Arg Ser Gln Glu | Val Gly Val Val His | Val His His Pro Val | Phe | | |
| | 740 | 745 | 750 | | |
| Cys Asp Pro Asn | Leu Asp Pro Lys Gln | Tyr Lys Met Cys Leu | Gly | | |
| | 755 | 760 | 765 | | |
| Ser Lys Ala Ser | Thr Tyr Gly Ser Thr | Gln Gln Leu Ala Glu | Met | | |
| | 770 | 775 | 780 | | |
| Trp Leu Glu Lys | Asn Asp Pro Ser Tyr | Ser Lys Ser Ser Asn | Asn | | |
| | 785 | 790 | 795 | | |
| Asn Gly Ser Val | Arg Thr Ala | | | | |
| | 800 | | | | |

<210> 261
 <211> 24

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 261
gtgccactac ggggtgtgga cgac 24

<210> 262
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 262
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<210> 263
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 263
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<210> 264
<211> 1419
<212> DNA
<213> Homo sapiens

<400> 264
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tccttctagt tgcgcttttg ctatggcett cgtctgtgcc ggcttatccg 200
agcataactg tgacacctga tgaagagcaa aacttgaatc attatataca 250
agtttttagag aacctagtac gaagtgttcc ctctggggag ccaggtcgtg 300
agaaaaaatc taactctcca aaacatgttt attctatagc atcaaaggga 350
tcaaaattta aggagctagt tacacatgga gacgcttcaa ctgagaatga 400

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 tggtcgatca aaccaaacaa tgtttccatt gttttgcatg cagaggaacc 550
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<210> 265

<211> 350

<212> PRT

<213> Homo sapiens

<400> 265

Met Lys Pro Leu Val Leu Leu Val Ala Leu Leu Leu Trp Pro Ser
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Ser Val Pro Ala Tyr Pro Ser Ile Thr Val Thr Pro Asp Glu Glu
 20 25 30

Gln Asn Leu Asn His Tyr Ile Gln Val Leu Glu Asn Leu Val Arg
 35 40 45

Ser Val Pro Ser Gly Glu Pro Gly Arg Glu Lys Lys Ser Asn Ser

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|
| | | | | 50 | | | | | | 55 | | | | | 60 | |
| Pro | Lys | His | Val | Tyr | Ser | Ile | Ala | Ser | Lys | Gly | Ser | Lys | Phe | Lys | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | |
| Glu | Leu | Val | Thr | His | Gly | Asp | Ala | Ser | Thr | Glu | Asn | Asp | Val | Leu | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | |
| Thr | Asn | Pro | Ile | Ser | Glu | Glu | Thr | Thr | Thr | Phe | Pro | Thr | Gly | Gly | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | |
| Phe | Thr | Pro | Glu | Ile | Gly | Lys | Lys | Lys | His | Thr | Glu | Ser | Thr | Pro | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | |
| Phe | Trp | Ser | Ile | Lys | Pro | Asn | Asn | Val | Ser | Ile | Val | Leu | His | Ala | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | |
| Glu | Glu | Pro | Tyr | Ile | Glu | Asn | Glu | Glu | Pro | Glu | Pro | Glu | Pro | Glu | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | |
| Pro | Ala | Ala | Lys | Gln | Thr | Glu | Ala | Pro | Arg | Met | Leu | Pro | Val | Val | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | |
| Thr | Glu | Ser | Ser | Thr | Ser | Pro | Tyr | Val | Thr | Ser | Tyr | Lys | Ser | Pro | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | |
| Val | Thr | Thr | Leu | Asp | Lys | Ser | Thr | Gly | Ile | Glu | Ile | Ser | Thr | Glu | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | |
| Ser | Glu | Asp | Val | Pro | Gln | Leu | Ser | Gly | Glu | Thr | Ala | Ile | Glu | Lys | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | |
| Pro | Glu | Glu | Phe | Gly | Lys | His | Pro | Glu | Ser | Trp | Asn | Asn | Asp | Asp | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | |
| Ile | Leu | Lys | Lys | Ile | Leu | Asp | Ile | Asn | Ser | Gln | Val | Gln | Gln | Ala | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | |
| Leu | Leu | Ser | Asp | Thr | Ser | Asn | Pro | Ala | Tyr | Arg | Glu | Asp | Ile | Glu | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| Ala | Ser | Lys | Asp | His | Leu | Lys | Arg | Ser | Leu | Ala | Leu | Ala | Ala | Ala | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Glu | His | Lys | Leu | Lys | Thr | Met | Tyr | Lys | Ser | Gln | Leu | Leu | Pro | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | |
| Val | Gly | Arg | Thr | Ser | Asn | Lys | Ile | Asp | Asp | Ile | Glu | Thr | Val | Ile | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | |
| Asn | Met | Leu | Cys | Asn | Ser | Arg | Ser | Lys | Leu | Tyr | Glu | Tyr | Leu | Asp | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | |
| Ile | Lys | Cys | Val | Pro | Pro | Glu | Met | Arg | Glu | Lys | Ala | Ala | Thr | Val | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | |
| Phe | Asn | Thr | Leu | Lys | Asn | Met | Cys | Arg | Ser | Arg | Arg | Val | Thr | Ala | | |
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Leu Leu Lys Val Tyr
350

<210> 266

<211> 2403

<212> DNA

<213> Homo sapiens

<400> 266

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gaccgggcaa gtttgtccag gccttgggtg gggaggacgc cgtgttctcc 250
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gactccattg caggggggag tgtctctcta aggctaaaaa acatcactcc 450
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agtgtgtcgg gatgacgtag acagggggaa gaacaatgtg actttgtctc 1250


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ccaacaatgg gtattgggtc ctgagactga caacagaaca tttgtatttc 1300
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gtccatatcc ctcatataca cagacacaaa aattctaaat aaaattttta 2250
caaattaaac taaacaatat atttaaagat gatataaac tactcagtgt 2300
ggtttgtccc acaaatgcag agttggttta atatttaa atcaaccagt 2350
gtaattcagc acattaataa agtaaaaaag aaaaccataa aaaaaaaaaa 2400
aaa 2403

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<210> 267
<211> 466
<212> PRT
<213> Homo sapiens

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Ser Gly Gln Trp Gln Val Thr Gly Pro Gly Lys Phe Val Gln Ala

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|-------------------------|---------------------|-----------------|---------|
| Leu Val Gly Glu Asp | Ala Val Phe Ser Cys | Ser Leu Phe Pro | Glu |
| | 35 | 40 | 45 |
| Thr Ser Ala Glu Ala Met | Glu Val Arg Phe | Phe Arg Asn Gln | Phe |
| | 50 | 55 | 60 |
| His Ala Val Val His | Leu Tyr Arg Asp | Gly Glu Asp Trp | Glu Ser |
| | 65 | 70 | 75 |
| Lys Gln Met Pro Gln | Tyr Arg Gly Arg | Thr Glu Phe Val | Lys Asp |
| | 80 | 85 | 90 |
| Ser Ile Ala Gly Gly | Arg Val Ser Leu | Arg Leu Lys Asn | Ile Thr |
| | 95 | 100 | 105 |
| Pro Ser Asp Ile Gly | Leu Tyr Gly Cys | Trp Phe Ser Ser | Gln Ile |
| | 110 | 115 | 120 |
| Tyr Asp Glu Glu Ala | Thr Trp Glu Leu | Arg Val Ala Ala | Leu Gly |
| | 125 | 130 | 135 |
| Ser Leu Pro Leu Ile | Ser Ile Val Gly | Tyr Val Asp Gly | Gly Ile |
| | 140 | 145 | 150 |
| Gln Leu Leu Cys Leu | Ser Ser Gly Trp | Phe Pro Gln Pro | Thr Ala |
| | 155 | 160 | 165 |
| Lys Trp Lys Gly Pro | Gln Gly Gln Asp | Leu Ser Ser Asp | Ser Arg |
| | 170 | 175 | 180 |
| Ala Asn Ala Asp Gly | Tyr Ser Leu Tyr | Asp Val Glu Ile | Ser Ile |
| | 185 | 190 | 195 |
| Ile Val Gln Glu Asn | Ala Gly Ser Ile | Leu Cys Ser Ile | His Leu |
| | 200 | 205 | 210 |
| Ala Glu Gln Ser His | Glu Val Glu Ser | Lys Val Leu Ile | Gly Glu |
| | 215 | 220 | 225 |
| Thr Phe Phe Gln Pro | Ser Pro Trp Arg | Leu Ala Ser Ile | Leu Leu |
| | 230 | 235 | 240 |
| Gly Leu Leu Cys Gly | Ala Leu Cys Gly | Val Val Met Gly | Met Ile |
| | 245 | 250 | 255 |
| Ile Val Phe Phe Lys | Ser Lys Gly Lys | Ile Gln Ala Glu | Leu Asp |
| | 260 | 265 | 270 |
| Trp Arg Arg Lys His | Gly Gln Ala Glu | Leu Arg Asp Ala | Arg Lys |
| | 275 | 280 | 285 |
| His Ala Val Glu Val | Thr Leu Asp Pro | Glu Thr Ala His | Pro Lys |
| | 290 | 295 | 300 |
| Leu Cys Val Ser Asp | Leu Lys Thr Val | Thr His Arg Lys | Ala Pro |
| | 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Val | Pro | His | Ser | Glu | Lys | Arg | Phe | Thr | Arg | Lys | Ser | Val | 320 | 325 | 330 |
| Val | Ala | Ser | Gln | Gly | Phe | Gln | Ala | Gly | Arg | His | Tyr | Trp | Glu | Val | 335 | 340 | 345 |
| Asp | Val | Gly | Gln | Asn | Val | Gly | Trp | Tyr | Val | Gly | Val | Cys | Arg | Asp | 350 | 355 | 360 |
| Asp | Val | Asp | Arg | Gly | Lys | Asn | Asn | Val | Thr | Leu | Ser | Pro | Asn | Asn | 365 | 370 | 375 |
| Gly | Tyr | Trp | Val | Leu | Arg | Leu | Thr | Thr | Glu | His | Leu | Tyr | Phe | Thr | 380 | 385 | 390 |
| Phe | Asn | Pro | His | Phe | Ile | Ser | Leu | Pro | Pro | Ser | Thr | Pro | Pro | Thr | 395 | 400 | 405 |
| Arg | Val | Gly | Val | Phe | Leu | Asp | Tyr | Glu | Gly | Gly | Thr | Ile | Ser | Phe | 410 | 415 | 420 |
| Phe | Asn | Thr | Asn | Asp | Gln | Ser | Leu | Ile | Tyr | Thr | Leu | Leu | Thr | Cys | 425 | 430 | 435 |
| Gln | Phe | Glu | Gly | Leu | Leu | Arg | Pro | Tyr | Ile | Gln | His | Ala | Met | Tyr | 440 | 445 | 450 |
| Asp | Glu | Glu | Lys | Gly | Thr | Pro | Ile | Phe | Ile | Cys | Pro | Val | Ser | Trp | 455 | 460 | 465 |

Gly

<210> 268

<211> 2103

<212> DNA

<213> Homo sapiens

<400> 268

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tgttttacat gaaaagctgc aagatgctgt aggaccccct aaagtagatc 500

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 catgactatg atatttctct tgcagagctt tctagccctg ttccctacac 900
 aaatgcagta catagagttt gtctccctga tgcactctat gagtttcaac 950
 caggtgatgt gatgtttgtg acaggatttg gagcactgaa aaatgatggt 1000
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 aataccaatc acttcatcat ttaggaagta tgggaactaa gttaaggaag 1900
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 caaacttcat gcaatgtact tgttctaagc aaattaaagc aaatatattat 2050
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 <212> PRT
 <213> Homo sapiens

<400> 269
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 35 40 45
 Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
 50 55 60
 Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
 65 70 75
 Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
 80 85 90
 Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
 95 100 105
 Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
 110 115 120
 Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
 125 130 135
 Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
 140 145 150
 Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
 155 160 165
 Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
 170 175 180
 Arg Arg Ser Lys Thr Leu Gly Gln Ser Leu Arg Ile Val Gly Gly
 185 190 195
 Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
 200 205 210
 Trp Asp Gly Ser His Arg Cys Gly Ala Thr Leu Ile Asn Ala Thr
 215 220 225

| | | | | | | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Val | Ser | Ala | Ala | His | Cys | Phe | Thr | Thr | Tyr | Lys | Asn | Pro | 230 | 235 | 240 |
| Ala | Arg | Trp | Thr | Ala | Ser | Phe | Gly | Val | Thr | Ile | Lys | Pro | Ser | Lys | 245 | 250 | 255 |
| Met | Lys | Arg | Gly | Leu | Arg | Arg | Ile | Ile | Val | His | Glu | Lys | Tyr | Lys | 260 | 265 | 270 |
| His | Pro | Ser | His | Asp | Tyr | Asp | Ile | Ser | Leu | Ala | Glu | Leu | Ser | Ser | 275 | 280 | 285 |
| Pro | Val | Pro | Tyr | Thr | Asn | Ala | Val | His | Arg | Val | Cys | Leu | Pro | Asp | 290 | 295 | 300 |
| Ala | Ser | Tyr | Glu | Phe | Gln | Pro | Gly | Asp | Val | Met | Phe | Val | Thr | Gly | 305 | 310 | 315 |
| Phe | Gly | Ala | Leu | Lys | Asn | Asp | Gly | Tyr | Ser | Gln | Asn | His | Leu | Arg | 320 | 325 | 330 |
| Gln | Ala | Gln | Val | Thr | Leu | Ile | Asp | Ala | Thr | Thr | Cys | Asn | Glu | Pro | 335 | 340 | 345 |
| Gln | Ala | Tyr | Asn | Asp | Ala | Ile | Thr | Pro | Arg | Met | Leu | Cys | Ala | Gly | 350 | 355 | 360 |
| Ser | Leu | Glu | Gly | Lys | Thr | Asp | Ala | Cys | Gln | Gly | Asp | Ser | Gly | Gly | 365 | 370 | 375 |
| Pro | Leu | Val | Ser | Ser | Asp | Ala | Arg | Asp | Ile | Trp | Tyr | Leu | Ala | Gly | 380 | 385 | 390 |
| Ile | Val | Ser | Trp | Gly | Asp | Glu | Cys | Ala | Lys | Pro | Asn | Lys | Pro | Gly | 395 | 400 | 405 |
| Val | Tyr | Thr | Arg | Val | Thr | Ala | Leu | Arg | Asp | Trp | Ile | Thr | Ser | Lys | 410 | 415 | 420 |
| Thr Gly Ile | | | | | | | | | | | | | | | | | |

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 <212> DNA
 <213> Homo sapiens

<400> 270
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 catgctgggc tctccctgcc ttctgtggct cctggcctg accttcttgg 200
 ttcccagagc tcagcccttg gccctcaag actttgaaga agaggaggca 250

gatgagactg agacggcgtg gccgcctttg ccggtgttcc cctgcgacta 300
cgaccactgc cgacacctgc aggtgccctg caaggagcta cagagggctg 350
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gacccgcccgc gcatgggaga agtgcgcatc gcggccgaag agggccgcgc 450
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tgctttggga cggcagcgag gctgcgcaga aggggcccc gctgaacgct 550
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cctccaggga gggctggacg gcgagctggg agccagcccc aggtccagg 1000
gccacggcgg agtcatggtt ctgaggactg agcgcttggt taggtccggt 1050
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<210> 271

<211> 238

<212> PRT

<213> Homo sapiens

<400> 271

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ser | Pro | Cys | Leu | Leu | Trp | Leu | Leu | Ala | Val | Thr | Phe |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Leu | Val | Pro | Arg | Ala | Gln | Pro | Leu | Ala | Pro | Gln | Asp | Phe | Glu | Glu |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Glu | Glu | Ala | Asp | Glu | Thr | Glu | Thr | Ala | Trp | Pro | Pro | Leu | Pro | Ala |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Val | Pro | Cys | Asp | Tyr | Asp | His | Cys | Arg | His | Leu | Gln | Val | Pro | Cys |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Lys | Glu | Leu | Gln | Arg | Val | Gly | Pro | Ala | Ala | Cys | Leu | Cys | Pro | Gly |
| | | | | 65 | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Pro | Ala | Gln | Pro | Pro | Asp | Pro | Pro | Arg | Met | Gly | Glu | 80 | 85 | 90 |
| Val | Arg | Ile | Ala | Ala | Glu | Glu | Gly | Arg | Ala | Val | Val | His | Trp | Cys | 95 | 100 | 105 |
| Ala | Pro | Phe | Ser | Pro | Val | Leu | His | Tyr | Trp | Leu | Leu | Leu | Trp | Asp | 110 | 115 | 120 |
| Gly | Ser | Glu | Ala | Ala | Gln | Lys | Gly | Pro | Pro | Leu | Asn | Ala | Thr | Val | 125 | 130 | 135 |
| Arg | Arg | Ala | Glu | Leu | Lys | Gly | Leu | Lys | Pro | Gly | Gly | Ile | Tyr | Val | 140 | 145 | 150 |
| Val | Cys | Val | Val | Ala | Ala | Asn | Glu | Ala | Gly | Ala | Ser | Arg | Val | Pro | 155 | 160 | 165 |
| Gln | Ala | Gly | Gly | Glu | Gly | Leu | Glu | Gly | Ala | Asp | Ile | Pro | Ala | Phe | 170 | 175 | 180 |
| Gly | Pro | Cys | Ser | Arg | Leu | Ala | Val | Pro | Pro | Asn | Pro | Arg | Thr | Leu | 185 | 190 | 195 |
| Val | His | Ala | Ala | Val | Gly | Val | Gly | Thr | Ala | Leu | Ala | Leu | Leu | Ser | 200 | 205 | 210 |
| Cys | Ala | Ala | Leu | Val | Trp | His | Phe | Cys | Leu | Arg | Asp | Arg | Trp | Gly | 215 | 220 | 225 |
| Cys | Pro | Arg | Arg | Ala | Ala | Ala | Arg | Ala | Ala | Gly | Ala | Leu | | | 230 | 235 | |

<210> 272
 <211> 2397
 <212> DNA
 <213> Homo sapiens

<400> 272
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 cccaggcggg cgtggggcac cgggcccagc gccgacgatc gctgccgttt 150
 tgcccttggg agtaggatgt ggtgaaagga tggggcttct cccttacggg 200
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<210> 273

<211> 305

<212> PRT

<213> Homo sapiens

<400> 273

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Arg | Glu | Asp | Ser | Val | Lys | Cys | Leu | Arg | Cys | Leu | Leu | Tyr | 1 | 5 | 10 | 15 |
| Ala | Leu | Asn | Leu | Leu | Phe | Trp | Leu | Met | Ser | Ile | Ser | Val | Leu | Ala | 20 | 25 | 30 | |
| Val | Ser | Ala | Trp | Met | Arg | Asp | Tyr | Leu | Asn | Asn | Val | Leu | Thr | Leu | 35 | 40 | 45 | |
| Thr | Ala | Glu | Thr | Arg | Val | Glu | Glu | Ala | Val | Ile | Leu | Thr | Tyr | Phe | 50 | 55 | 60 | |
| Pro | Val | Val | His | Pro | Val | Met | Ile | Ala | Val | Cys | Cys | Phe | Leu | Ile | 65 | 70 | 75 | |
| Ile | Val | Gly | Met | Leu | Gly | Tyr | Cys | Gly | Thr | Val | Lys | Arg | Asn | Leu | 80 | 85 | 90 | |
| Leu | Leu | Leu | Ala | Trp | Tyr | Phe | Gly | Ser | Leu | Leu | Val | Ile | Phe | Cys | 95 | 100 | 105 | |
| Val | Glu | Leu | Ala | Cys | Gly | Val | Trp | Thr | Tyr | Glu | Gln | Glu | Leu | Met | 110 | 115 | 120 | |
| Val | Pro | Val | Gln | Trp | Ser | Asp | Met | Val | Thr | Leu | Lys | Ala | Arg | Met | 125 | 130 | 135 | |
| Thr | Asn | Tyr | Gly | Leu | Pro | Arg | Tyr | Arg | Trp | Leu | Thr | His | Ala | Trp | 140 | 145 | 150 | |
| Asn | Phe | Phe | Gln | Arg | Glu | Phe | Lys | Cys | Cys | Gly | Val | Val | Tyr | Phe | 155 | 160 | 165 | |
| Thr | Asp | Trp | Leu | Glu | Met | Thr | Glu | Met | Asp | Trp | Pro | Pro | Asp | Ser | | | | |

| | | | | | |
|---------------------|---------------------|-------------------------|-----|--|-----|
| | 170 | | 175 | | 180 |
| Cys Cys Val Arg | Glu Phe Pro Gly Cys | Ser Lys Gln Ala His Gln | | | |
| | 185 | 190 | | | 195 |
| Glu Asp Leu Ser | Asp Leu Tyr Gln Glu | Gly Cys Gly Lys Lys Met | | | |
| | 200 | 205 | | | 210 |
| Tyr Ser Phe Leu | Arg Gly Thr Lys Gln | Leu Gln Val Leu Arg Phe | | | |
| | 215 | 220 | | | 225 |
| Leu Gly Ile Ser | Ile Gly Val Thr Gln | Ile Leu Ala Met Ile Leu | | | |
| | 230 | 235 | | | 240 |
| Thr Ile Thr Leu | Leu Trp Ala Leu Tyr | Tyr Asp Arg Arg Glu Pro | | | |
| | 245 | 250 | | | 255 |
| Gly Thr Asp Gln | Met Met Ser Leu Lys | Asn Asp Asn Ser Gln His | | | |
| | 260 | 265 | | | 270 |
| Leu Ser Cys Pro | Ser Val Glu Leu Leu | Lys Pro Ser Leu Ser Arg | | | |
| | 275 | 280 | | | 285 |
| Ile Phe Glu His | Thr Ser Met Ala Asn | Ser Phe Asn Thr His Phe | | | |
| | 290 | 295 | | | 300 |
| Glu Met Glu Glu Leu | | | | | |
| | 305 | | | | |

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 <211> 2063
 <212> DNA
 <213> Homo sapiens

<400> 274
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caaaaaaaaaaaa aaa 2063

<210> 275

<211> 432

<212> PRT

<213> Homo sapiens

<400> 275

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Lys Val Gly Ile Pro Ile Ile Ile Ala Leu Leu Ser Leu Ala Ser
35 40 45

Ile Ile Ile Val Val Val Leu Ile Lys Val Ile Leu Asp Lys Tyr
50 55 60

Tyr Phe Leu Cys Gly Gln Pro Leu His Phe Ile Pro Arg Lys Gln
65 70 75

Leu Cys Asp Gly Glu Leu Asp Cys Pro Leu Gly Glu Asp Glu Glu
80 85 90

His Cys Val Lys Ser Phe Pro Glu Gly Pro Ala Val Ala Val Arg
95 100 105

Leu Ser Lys Asp Arg Ser Thr Leu Gln Val Leu Asp Ser Ala Thr
110 115 120

Gly Asn Trp Phe Ser Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu
125 130 135

Ala Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Arg Ala Val Glu
140 145 150

Ile Gly Pro Asp Gln Asp Leu Asp Val Val Glu Ile Thr Glu Asn
155 160 165

Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu Ser
170 175 180

Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Lys Ser Leu
185 190 195

Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser
200 205 210

Trp Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys
215 220 225

Gly Gly Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His
230 235 240

Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala
245 250 255

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Asp | Lys | Leu | Gly | Ser | Phe | Pro | Ser | Leu | Ala | Val | Ala | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ile | Ile | Ile | Ile | Glu | Phe | Asn | Pro | Met | Tyr | Pro | Lys | Asp | Asn | Asp |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ile | Ala | Leu | Met | Lys | Leu | Gln | Phe | Pro | Leu | Thr | Phe | Ser | Gly | Thr |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Val | Arg | Pro | Ile | Cys | Leu | Pro | Phe | Phe | Asp | Glu | Glu | Leu | Thr | Pro |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ala | Thr | Pro | Leu | Trp | Ile | Ile | Gly | Trp | Gly | Phe | Thr | Lys | Gln | Asn |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gly | Gly | Lys | Met | Ser | Asp | Ile | Leu | Leu | Gln | Ala | Ser | Val | Gln | Val |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ile | Asp | Ser | Thr | Arg | Cys | Asn | Ala | Asp | Asp | Ala | Tyr | Gln | Gly | Glu |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Val | Thr | Glu | Lys | Met | Met | Cys | Ala | Gly | Ile | Pro | Glu | Gly | Gly | Val |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Asp | Thr | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Met | Tyr | Gln | Ser |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Asp | Gln | Trp | His | Val | Val | Gly | Ile | Val | Ser | Trp | Gly | Tyr | Gly | Cys |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Gly | Gly | Pro | Ser | Thr | Pro | Gly | Val | Tyr | Thr | Lys | Val | Ser | Ala | Tyr |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Leu | Asn | Trp | Ile | Tyr | Asn | Val | Trp | Lys | Ala | Glu | Leu | | | |
| | | | | 425 | | | | | 430 | | | | | |

<210> 276
 <211> 3143
 <212> DNA
 <213> Homo sapiens

<400> 276
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 ttttcctctt ccaactgctt cagctgctgc tgccgacgac gaccgcgggg 200
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 acgtagggca cttagcttct tccaccagaa gggcctccag gattttgaca 300
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 gccattctgg ccttgatat ccaggatcca ggggtcccca ggctaaagaa 400

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<210> 277

<211> 761

<212> PRT

<213> Homo sapiens

<400> 277

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Leu | Pro | Ala | Leu | Gly | Leu | Asp | Pro | Trp | Ser | Leu | Leu | Gly | 1 | 5 | 10 | 15 |
| Leu | Phe | Leu | Phe | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Pro | Thr | Thr | Thr | 20 | 25 | 30 | |
| Ala | Gly | Gly | Gly | Gly | Gln | Gly | Pro | Met | Pro | Arg | Val | Arg | Tyr | Tyr | 35 | 40 | 45 | |
| Ala | Gly | Asp | Glu | Arg | Arg | Ala | Leu | Ser | Phe | Phe | His | Gln | Lys | Gly | 50 | 55 | 60 | |
| Leu | Gln | Asp | Phe | Asp | Thr | Leu | Leu | Leu | Ser | Gly | Asp | Gly | Asn | Thr | 65 | 70 | 75 | |
| Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Ile | Leu | Ala | Leu | Asp | Ile | Gln | 80 | 85 | 90 | |
| Asp | Pro | Gly | Val | Pro | Arg | Leu | Lys | Asn | Met | Ile | Pro | Trp | Pro | Ala | 95 | 100 | 105 | |
| Ser | Asp | Arg | Lys | Lys | Ser | Glu | Cys | Ala | Phe | Lys | Lys | Lys | Ser | Asn | 110 | 115 | 120 | |
| Glu | Thr | Gln | Cys | Phe | Asn | Phe | Ile | Arg | Val | Leu | Val | Ser | Tyr | Asn | 125 | 130 | 135 | |
| Val | Thr | His | Leu | Tyr | Thr | Cys | Gly | Thr | Phe | Ala | Phe | Ser | Pro | Ala | 140 | 145 | 150 | |
| Cys | Thr | Phe | Ile | Glu | Leu | Gln | Asp | Ser | Tyr | Leu | Leu | Pro | Ile | Ser | 155 | 160 | 165 | |
| Glu | Asp | Lys | Val | Met | Glu | Gly | Lys | Gly | Gln | Ser | Pro | Phe | Asp | Pro | 170 | 175 | 180 | |
| Ala | His | Lys | His | Thr | Ala | Val | Leu | Val | Asp | Gly | Met | Leu | Tyr | Ser | 185 | 190 | 195 | |
| Gly | Thr | Met | Asn | Asn | Phe | Leu | Gly | Ser | Glu | Pro | Ile | Leu | Met | Arg | 200 | 205 | 210 | |
| Thr | Leu | Gly | Ser | Gln | Pro | Val | Leu | Lys | Thr | Asp | Asn | Phe | Leu | Arg | 215 | 220 | 225 | |
| Trp | Leu | His | His | Asp | Ala | Ser | Phe | Val | Ala | Ala | Ile | Pro | Ser | Thr | 230 | 235 | 240 | |
| Gln | Val | Val | Tyr | Phe | Phe | Phe | Glu | Glu | Thr | Ala | Ser | Glu | Phe | Asp | 245 | 250 | 255 | |
| Phe | Phe | Glu | Arg | Leu | His | Thr | Ser | Arg | Val | Ala | Arg | Val | Cys | Lys | 260 | 265 | 270 | |
| Asn | Asp | Val | Gly | Gly | Glu | Lys | Leu | Leu | Gln | Lys | Lys | Trp | Thr | Thr | 275 | 280 | 285 | |
| Phe | Leu | Lys | Ala | Gln | Leu | Leu | Cys | Thr | Gln | Pro | Gly | Gln | Leu | Pro | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Ser | Tyr | Tyr | Trp | Ser | His | Gly | Pro | Ala | Ala | Val | Pro | Glu | 590 | 595 | 600 |
| Ala | Ser | Ser | Thr | Val | Tyr | Asn | Gly | Ser | Leu | Leu | Leu | Ile | Val | Gln | 605 | 610 | 615 |
| Asp | Gly | Val | Gly | Gly | Leu | Tyr | Gln | Cys | Trp | Ala | Thr | Glu | Asn | Gly | 620 | 625 | 630 |
| Phe | Ser | Tyr | Pro | Val | Ile | Ser | Tyr | Trp | Val | Asp | Ser | Gln | Asp | Gln | 635 | 640 | 645 |
| Thr | Leu | Ala | Leu | Asp | Pro | Glu | Leu | Ala | Gly | Ile | Pro | Arg | Glu | His | 650 | 655 | 660 |
| Val | Lys | Val | Pro | Leu | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Leu | Ala | 665 | 670 | 675 |
| Ala | Gln | Gln | Ser | Tyr | Trp | Pro | His | Phe | Val | Thr | Val | Thr | Val | Leu | 680 | 685 | 690 |
| Phe | Ala | Leu | Val | Leu | Ser | Gly | Ala | Leu | Ile | Ile | Leu | Val | Ala | Ser | 695 | 700 | 705 |
| Pro | Leu | Arg | Ala | Leu | Arg | Ala | Arg | Gly | Lys | Val | Gln | Gly | Cys | Glu | 710 | 715 | 720 |
| Thr | Leu | Arg | Pro | Gly | Glu | Lys | Ala | Pro | Leu | Ser | Arg | Glu | Gln | His | 725 | 730 | 735 |
| Leu | Gln | Ser | Pro | Lys | Glu | Cys | Arg | Thr | Ser | Ala | Ser | Asp | Val | Asp | 740 | 745 | 750 |
| Ala | Asp | Asn | Asn | Cys | Leu | Gly | Thr | Glu | Val | Ala | | | | | 755 | 760 | |

<210> 278
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 278
 ctgctggtga aatctggcgt ggag 24

<210> 279
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 279
gtctggtcct ggctgtccac ccag 24

<210> 280
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 280
catcttgtca tgtacctggg aaccaccaca gggtcgctcc acaag 45

<210> 281
<211> 2320
<212> DNA
<213> Homo sapiens

<400> 281
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ttccttctcc ctggggctct gctctcagag gctgccaaaa tcctgacaat 150
atctacagta ggtggaagcc attatctact gatggaccgg gtttctcaga 200
ttcttcaaga tcacggtcac aatgtcacca tgcttaacca caaaagaggt 250
ccttttatgc cagattttta aaaggaagaa aaatcatatc aagttatcag 300
ttggcttgca cctgaagatc atcaaagaga atttaaaaag agttttgatt 350
tctttctgga agaaacttta ggtggcagag gaaaatttga aaacttatta 400
aatgttctag aatacttggc gttgcagtgc agtcattttt taaatagaaa 450
ggatatcatg gattccttaa agaagtagaa ctctgacatg gtgatagttg 500
aaacttttga ctactgtcct ttcttgattg ctgagaagct tgggaagcca 550
tttgtggcca ttctttccac ttcatcggc tctttggaat ttgggctacc 600
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cttcccaaca ctgtttatgt tggaggcttg atggaaaaac ctattaaacc 900

agtaccacaa gacttggaga acttcattgc caagtttggg gactctgggt 950
 ttgtccttgt gaccttgggc tccatggtga acacotgtca gaatccggaa 1000
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 gtccctgtct ctggtgcccc cagtgagctc cttcttggct gagcaggcat 2250
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 tctctcccca acctcaactaa 2320

<210> 282
 <211> 523
 <212> PRT
 <213> Homo sapiens

<400> 282

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Gln | Arg | Val | Leu | Leu | Leu | Val | Gly | Phe | Leu | Leu | Pro | 1 | 5 | 10 | 15 |
| Gly | Val | Leu | Leu | Ser | Glu | Ala | Ala | Lys | Ile | Leu | Thr | Ile | Ser | Thr | 20 | 25 | 30 | |
| Val | Gly | Gly | Ser | His | Tyr | Leu | Leu | Met | Asp | Arg | Val | Ser | Gln | Ile | 35 | 40 | 45 | |
| Leu | Gln | Asp | His | Gly | His | Asn | Val | Thr | Met | Leu | Asn | His | Lys | Arg | 50 | 55 | 60 | |
| Gly | Pro | Phe | Met | Pro | Asp | Phe | Lys | Lys | Glu | Glu | Lys | Ser | Tyr | Gln | 65 | 70 | 75 | |
| Val | Ile | Ser | Trp | Leu | Ala | Pro | Glu | Asp | His | Gln | Arg | Glu | Phe | Lys | 80 | 85 | 90 | |
| Lys | Ser | Phe | Asp | Phe | Phe | Leu | Glu | Glu | Thr | Leu | Gly | Gly | Arg | Gly | 95 | 100 | 105 | |
| Lys | Phe | Glu | Asn | Leu | Leu | Asn | Val | Leu | Glu | Tyr | Leu | Ala | Leu | Gln | 110 | 115 | 120 | |
| Cys | Ser | His | Phe | Leu | Asn | Arg | Lys | Asp | Ile | Met | Asp | Ser | Leu | Lys | 125 | 130 | 135 | |
| Asn | Glu | Asn | Phe | Asp | Met | Val | Ile | Val | Glu | Thr | Phe | Asp | Tyr | Cys | 140 | 145 | 150 | |
| Pro | Phe | Leu | Ile | Ala | Glu | Lys | Leu | Gly | Lys | Pro | Phe | Val | Ala | Ile | 155 | 160 | 165 | |
| Leu | Ser | Thr | Ser | Phe | Gly | Ser | Leu | Glu | Phe | Gly | Leu | Pro | Ile | Pro | 170 | 175 | 180 | |
| Leu | Ser | Tyr | Val | Pro | Val | Phe | Arg | Ser | Leu | Leu | Thr | Asp | His | Met | 185 | 190 | 195 | |
| Asp | Phe | Trp | Gly | Arg | Val | Lys | Asn | Phe | Leu | Met | Phe | Phe | Ser | Phe | 200 | 205 | 210 | |
| Cys | Arg | Arg | Gln | Gln | His | Met | Gln | Ser | Thr | Phe | Asp | Asn | Thr | Ile | 215 | 220 | 225 | |
| Lys | Glu | His | Phe | Thr | Glu | Gly | Ser | Arg | Pro | Val | Leu | Ser | His | Leu | 230 | 235 | 240 | |
| Leu | Leu | Lys | Ala | Glu | Leu | Trp | Phe | Ile | Asn | Ser | Asp | Phe | Ala | Phe | 245 | 250 | 255 | |
| Asp | Phe | Ala | Arg | Pro | Leu | Leu | Pro | Asn | Thr | Val | Tyr | Val | Gly | Gly | | | | |

| | 260 | 265 | 270 |
|-----------------|---------------------|-------------------------|-----|
| Leu Met Glu Lys | Pro Ile Lys Pro Val | Pro Gln Asp Leu Glu Asn | |
| | 275 | 280 | 285 |
| Phe Ile Ala Lys | Phe Gly Asp Ser Gly | Phe Val Leu Val Thr Leu | |
| | 290 | 295 | 300 |
| Gly Ser Met Val | Asn Thr Cys Gln Asn | Pro Glu Ile Phe Lys Glu | |
| | 305 | 310 | 315 |
| Met Asn Asn Ala | Phe Ala His Leu Pro | Gln Gly Val Ile Trp Lys | |
| | 320 | 325 | 330 |
| Cys Gln Cys Ser | His Trp Pro Lys Asp | Val His Leu Ala Ala Asn | |
| | 335 | 340 | 345 |
| Val Lys Ile Val | Asp Trp Leu Pro Gln | Ser Asp Leu Leu Ala His | |
| | 350 | 355 | 360 |
| Pro Ser Ile Arg | Leu Phe Val Thr His | Gly Gly Gln Asn Ser Ile | |
| | 365 | 370 | 375 |
| Met Glu Ala Ile | Gln His Gly Val Pro | Met Val Gly Ile Pro Leu | |
| | 380 | 385 | 390 |
| Phe Gly Asp Gln | Pro Glu Asn Met Val | Arg Val Glu Ala Lys Lys | |
| | 395 | 400 | 405 |
| Phe Gly Val Ser | Ile Gln Leu Lys Lys | Leu Lys Ala Glu Thr Leu | |
| | 410 | 415 | 420 |
| Ala Leu Lys Met | Lys Gln Ile Met Glu | Asp Lys Arg Tyr Lys Ser | |
| | 425 | 430 | 435 |
| Ala Ala Val Ala | Ala Ser Val Ile Leu | Arg Ser His Pro Leu Ser | |
| | 440 | 445 | 450 |
| Pro Thr Gln Arg | Leu Val Gly Trp Ile | Asp His Val Leu Gln Thr | |
| | 455 | 460 | 465 |
| Gly Gly Ala Thr | His Leu Lys Pro Tyr | Val Phe Gln Gln Pro Trp | |
| | 470 | 475 | 480 |
| His Glu Gln Tyr | Leu Phe Asp Val Phe | Val Phe Leu Leu Gly Leu | |
| | 485 | 490 | 495 |
| Thr Leu Gly Thr | Leu Trp Leu Cys Gly | Lys Leu Leu Gly Met Ala | |
| | 500 | 505 | 510 |
| Val Trp Trp Leu | Arg Gly Ala Arg Lys | Val Lys Glu Thr | |
| | 515 | 520 | |

<210> 283

<211> 24

<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 283
tgcccttgct cacctacccc aagg 24

<210> 284
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 284
tcaggctggt ctccaaagag aggg 24

<210> 285
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 285
cccaaagatg tccacctggc tgcaaatgtg aaaattgtgg actgg 45

<210> 286
<211> 2340
<212> DNA
<213> Homo sapiens

<400> 286
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gtgctgtccc atccagcagg gctaccctga agctctggct gcagccctcc 200
cgtccagtgg gcaggcggct tcatccctcc tttctctccc aaagcccaac 250
tgctgtcact gcatgctctg ccaaggagga gggaactgca gtgacagcag 300
gagtaagagt gggaggcagg acagagctgg gacacaggta tggagagggg 350
gttcagcgag cctagagagg gcagactatc agggtgccgg cggtgagaat 400
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gggttgcaga gccctcagc catgttggga gccaagccac actggctacc 500
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 gggagcagcc ctgggagagg cccccctgg gcgagtggca tttgctgcgg 700
 tccgaagcca ccaccatgag ccagcagggg aaaccggcaa tggcaccagt 750
 ggggccatct acttcgacca ggtcctggtg aacgagggcg gtggctttga 800
 ccgggcctct ggctccttcg tagccctgt ccggggtgtc tacagcttcc 850
 ggttccatgt ggtgaagggtg tacaaccgcc aaactgtcca ggtgagcctg 900
 atgctgaaca cgtggcctgt catctcagcc tttgccaatg atcctgacgt 950
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 cccagaaac agcagaggca ggagagagac tccctctggc tcctatccca 1200
 cctctttgca tgggacctg tgccaaacac ccaagtttaa gagaagagta 1250
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<210> 287

<211> 205

<212> PRT

<213> Homo sapiens

<400> 287

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ala | Lys | Pro | His | Trp | Leu | Pro | Gly | Pro | Leu | His | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Gly | Leu | Pro | Leu | Val | Leu | Val | Leu | Leu | Ala | Leu | Gly | Ala | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Trp | Ala | Gln | Glu | Gly | Ser | Glu | Pro | Val | Leu | Leu | Glu | Gly | Glu | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Val | Val | Cys | Glu | Pro | Gly | Arg | Ala | Ala | Ala | Gly | Gly | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ala | Ala | Leu | Gly | Glu | Ala | Pro | Pro | Gly | Arg | Val | Ala | Phe | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Val | Arg | Ser | His | His | His | Glu | Pro | Ala | Gly | Glu | Thr | Gly | Asn |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Thr | Ser | Gly | Ala | Ile | Tyr | Phe | Asp | Gln | Val | Leu | Val | Asn | Glu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Gly | Gly | Phe | Asp | Arg | Ala | Ser | Gly | Ser | Phe | Val | Ala | Pro | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Arg | Gly | Val | Tyr | Ser | Phe | Arg | Phe | His | Val | Val | Lys | Val | Tyr | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Gln | Thr | Val | Gln | Val | Ser | Leu | Met | Leu | Asn | Thr | Trp | Pro | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Ser | Ala | Phe | Ala | Asn | Asp | Pro | Asp | Val | Thr | Arg | Glu | Ala | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Ser | Ser | Val | Leu | Leu | Pro | Leu | Asp | Pro | Gly | Asp | Arg | Val | Ser |

170

175

180

Leu Arg Leu Arg Arg Gly Asn Leu Leu Gly Gly Trp Lys Tyr Ser
 185 190 195

Ser Phe Ser Gly Phe Leu Ile Phe Pro Leu
 200 205

<210> 288

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 288

aggcagccac cagctctgtg ctac 24

<210> 289

<211> 27

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-27

<223> Synthetic construct.

<400> 289

cagagaggga agatgaggaa gccagag 27

<210> 290

<211> 42

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-42

<223> Synthetic construct.

<400> 290

ctgtgctact gcccttgac cctggggacc gagtgtctct gc 42

<210> 291

<211> 1570

<212> DNA

<213> Homo sapiens

<400> 291

gctgtttctc tcgcgccacc actggccgcc ggccgcagct ccaggtgtcc 50

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ccctggcccc gggggccggg gcatgggcca ggggcgcggg gtgaagcggc 150

<210> 292
 <211> 388
 <212> PRT
 <213> Homo sapiens

<400> 292

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Thr | Leu | Ile | Ala | Ala | Tyr | Ser | Gly | Val | Leu | Arg | Gly | Glu | 1 | 5 | 10 | 15 |
| Arg | Gln | Ala | Glu | Ala | Asp | Arg | Ser | Gln | Arg | Ser | His | Gly | Gly | Pro | 20 | 25 | 30 | |
| Ala | Leu | Ser | Arg | Glu | Gly | Ser | Gly | Arg | Trp | Gly | Thr | Gly | Ser | Ser | 35 | 40 | 45 | |
| Ile | Leu | Ser | Ala | Leu | Gln | Asp | Leu | Phe | Ser | Val | Thr | Trp | Leu | Asn | 50 | 55 | 60 | |
| Arg | Ser | Lys | Val | Glu | Lys | Gln | Leu | Gln | Val | Ile | Ser | Val | Leu | Gln | 65 | 70 | 75 | |
| Trp | Val | Leu | Ser | Phe | Leu | Val | Leu | Gly | Val | Ala | Cys | Ser | Ala | Ile | 80 | 85 | 90 | |
| Leu | Met | Tyr | Ile | Phe | Cys | Thr | Asp | Cys | Trp | Leu | Ile | Ala | Val | Leu | 95 | 100 | 105 | |
| Tyr | Phe | Thr | Trp | Leu | Val | Phe | Asp | Trp | Asn | Thr | Pro | Lys | Lys | Gly | 110 | 115 | 120 | |
| Gly | Arg | Arg | Ser | Gln | Trp | Val | Arg | Asn | Trp | Ala | Val | Trp | Arg | Tyr | 125 | 130 | 135 | |
| Phe | Arg | Asp | Tyr | Phe | Pro | Ile | Gln | Leu | Val | Lys | Thr | His | Asn | Leu | 140 | 145 | 150 | |
| Leu | Thr | Thr | Arg | Asn | Tyr | Ile | Phe | Gly | Tyr | His | Pro | His | Gly | Ile | 155 | 160 | 165 | |
| Met | Gly | Leu | Gly | Ala | Phe | Cys | Asn | Phe | Ser | Thr | Glu | Ala | Thr | Glu | 170 | 175 | 180 | |
| Val | Ser | Lys | Lys | Phe | Pro | Gly | Ile | Arg | Pro | Tyr | Leu | Ala | Thr | Leu | 185 | 190 | 195 | |
| Ala | Gly | Asn | Phe | Arg | Met | Pro | Val | Leu | Arg | Glu | Tyr | Leu | Met | Ser | 200 | 205 | 210 | |
| Gly | Gly | Ile | Cys | Pro | Val | Ser | Arg | Asp | Thr | Ile | Asp | Tyr | Leu | Leu | 215 | 220 | 225 | |
| Ser | Lys | Asn | Gly | Ser | Gly | Asn | Ala | Ile | Ile | Ile | Val | Val | Gly | Gly | 230 | 235 | 240 | |
| Ala | Ala | Glu | Ser | Leu | Ser | Ser | Met | Pro | Gly | Lys | Asn | Ala | Val | Thr | 245 | 250 | 255 | |
| Leu | Arg | Asn | Arg | Lys | Gly | Phe | Val | Lys | Leu | Ala | Leu | Arg | His | Gly | | | | |

| | | |
|-----------------|---|-----|
| 260 | 265 | 270 |
| Ala Asp Leu Val | Pro Ile Tyr Ser Phe Gly Glu Asn Glu Val Tyr | |
| 275 | 280 | 285 |
| Lys Gln Val Ile | Phe Glu Glu Gly Ser Trp Gly Arg Trp Val Gln | |
| 290 | 295 | 300 |
| Lys Lys Phe Gln | Lys Tyr Ile Gly Phe Ala Pro Cys Ile Phe His | |
| 305 | 310 | 315 |
| Gly Arg Gly Leu | Phe Ser Ser Asp Thr Trp Gly Leu Val Pro Tyr | |
| 320 | 325 | 330 |
| Ser Lys Pro Ile | Thr Thr Val Val Gly Glu Pro Ile Thr Ile Pro | |
| 335 | 340 | 345 |
| Lys Leu Glu His | Pro Thr Gln Gln Asp Ile Asp Leu Tyr His Thr | |
| 350 | 355 | 360 |
| Met Tyr Met Glu | Ala Leu Val Lys Leu Phe Asp Lys His Lys Thr | |
| 365 | 370 | 375 |
| Lys Phe Gly Leu | Pro Glu Thr Glu Val Leu Glu Val Asn | |
| 380 | 385 | |

<210> 293

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 293

gctgacctgg ttcccatcta ctcc 24

<210> 294

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 294

cccacagaca cccatgacac ttcc 24

<210> 295

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 295
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<210> 296
<211> 3060
<212> DNA
<213> Homo sapiens

<400> 296
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cggggccgcg gaggcgacgc cggggacgcc cgcgcgacga gcaggtggcg 150
gcggctgcag gcttgtccag ccggaagccc tgagggcagc tgttcccact 200
ggctctgctg accttgtgcc ttggacggct gtctcagcg agggggcctg 250
caccgctcc tgagcagcgc catgggcctg ctggccttcc tgaagacca 300
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cagctctacc gccgcctcaa ctgccgcctc gcctactcac tctggagcca 450
actggctcatg ctgctggagt ggtggctcctg cacggagtgt acactgttca 500
cggaccaggc cacggtagag cgctttggga aggagcaogc agtcatcatc 550
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ggacgcgctt cacggagacc aagcacccgc ttagcatgga ggtggcggct 850
gctaaggggc ttctgtcct caagtaccac ctgctgccgc ggaccaaggg 900
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 ccaggagac tgaagtggga ggatcgcttg ggcatgagaa gtcgaggctg 3000
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<210> 297

<211> 368

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Leu | Leu | Ala | Phe | Leu | Lys | Thr | Gln | Phe | Val | Leu | His | Leu | 1 | 5 | 10 | 15 |
| Leu | Val | Gly | Phe | Val | Phe | Val | Val | Ser | Gly | Leu | Val | Ile | Asn | Phe | 20 | 25 | 30 | |
| Val | Gln | Leu | Cys | Thr | Leu | Ala | Leu | Trp | Pro | Val | Ser | Lys | Gln | Leu | 35 | 40 | 45 | |
| Tyr | Arg | Arg | Leu | Asn | Cys | Arg | Leu | Ala | Tyr | Ser | Leu | Trp | Ser | Gln | 50 | 55 | 60 | |
| Leu | Val | Met | Leu | Leu | Glu | Trp | Trp | Ser | Cys | Thr | Glu | Cys | Thr | Leu | 65 | 70 | 75 | |
| Phe | Thr | Asp | Gln | Ala | Thr | Val | Glu | Arg | Phe | Gly | Lys | Glu | His | Ala | 80 | 85 | 90 | |
| Val | Ile | Ile | Leu | Asn | His | Asn | Phe | Glu | Ile | Asp | Phe | Leu | Cys | Gly | 95 | 100 | 105 | |
| Trp | Thr | Met | Cys | Glu | Arg | Phe | Gly | Val | Leu | Gly | Ser | Ser | Lys | Val | 110 | 115 | 120 | |
| Leu | Ala | Lys | Lys | Glu | Leu | Leu | Tyr | Val | Pro | Leu | Ile | Gly | Trp | Thr | 125 | 130 | 135 | |
| Trp | Tyr | Phe | Leu | Glu | Ile | Val | Phe | Cys | Lys | Arg | Lys | Trp | Glu | Glu | 140 | 145 | 150 | |
| Asp | Arg | Asp | Thr | Val | Val | Glu | Gly | Leu | Arg | Arg | Leu | Ser | Asp | Tyr | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Glu | Tyr | Met | Trp | Phe | Leu | Leu | Tyr | Cys | Glu | Gly | Thr | Arg | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Glu | Thr | Lys | His | Arg | Val | Ser | Met | Glu | Val | Ala | Ala | Ala | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Leu | Pro | Val | Leu | Lys | Tyr | His | Leu | Leu | Pro | Arg | Thr | Lys | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Thr | Thr | Ala | Val | Lys | Cys | Leu | Arg | Gly | Thr | Val | Ala | Ala | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Asp | Val | Thr | Leu | Asn | Phe | Arg | Gly | Asn | Lys | Asn | Pro | Ser | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gly | Ile | Leu | Tyr | Gly | Lys | Lys | Tyr | Glu | Ala | Asp | Met | Cys | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Arg | Phe | Pro | Leu | Glu | Asp | Ile | Pro | Leu | Asp | Glu | Lys | Glu | Ala | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Gln | Trp | Leu | His | Lys | Leu | Tyr | Gln | Glu | Lys | Asp | Ala | Leu | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Ile | Tyr | Asn | Gln | Lys | Gly | Met | Phe | Pro | Gly | Glu | Gln | Phe | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Pro | Ala | Arg | Arg | Pro | Trp | Thr | Leu | Leu | Asn | Phe | Leu | Ser | Trp | Ala | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Ile | Leu | Leu | Ser | Pro | Leu | Phe | Ser | Phe | Val | Leu | Gly | Val | Phe | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ala | Ser | Gly | Ser | Pro | Leu | Leu | Ile | Leu | Thr | Phe | Leu | Gly | Phe | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gly | Ala | Ala | Ser | Phe | Gly | Val | Arg | Arg | Leu | Ile | Gly | Glu | Ser | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Pro | Gly | Arg | Trp | Arg | Leu | Gln | | | | | | | | |
| | | | | 365 | | | | | | | | | | | |

<210> 298

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 298

cttcctctgt ggggtggacca tgtg 24

<210> 299

<211> 21

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-21

<223> Synthetic construct.

<400> 299

gccacctcca tgctaacgcg g 21

<210> 300

<211> 45

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-45

<223> Synthetic construct.

<400> 300

ccaaggtcct cgctaagaag gagctgctct acgtgccoct catcg 45

<210> 301

<211> 1334

<212> DNA

<213> Homo sapiens

<400> 301

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tgcttttagca ctggggcact tcttgcttat ttctttggta ggaaaggggc 150
tcagtttgtc ttgtgggggt ggtggcaggc aggccggctt acgcctgata 200
cggccctggg ttagaaggga agggaagata aacttttata caaatgggga 250
tagctgggggt ctgagacctg ctctctcagt aaaattcctg ggatctgcct 300
ataccttctt ttctctaacc tggcataccc tgcttaaagc ctctcagggc 350
ttctctctgt tcttaggatc aaagtattta gagctacaag agccctcatg 400
gtctggcccc tgccccctg gccagcttca ttgtacatgt ggtgttctct 450
tgtcgttcct gtaatgtggt atgccatggg gtctttgcac aagcctttcc 500
tctttggctg gacactgttc cctgcccccc ccatactctt cctacttaat 550
atgtagtcat cctgcagatt tcaattctaa catcattttc tccagggatc 600
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aggggtcaagg gcattgctgt gcctgccagg tatagtgcct acatgtggtg 800
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 cgttgactgt gcttgtgaat tatctgggga tgcaggctct gattcagtag 950
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<210> 302

<211> 143

<212> PRT

<213> Homo sapiens

<400> 302

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | His | Ser | Leu | Gln | Cys | Pro | Gly | Ala | Ala | Thr | Arg | His | Ile |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| His | Leu | Cys | Val | Cys | Phe | Ser | Phe | Ala | Leu | Ala | Leu | Gly | His | Phe |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Leu | Leu | Ile | Ser | Leu | Val | Gly | Lys | Gly | Leu | Ser | Leu | Ser | Cys | Gly |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Val | Gly | Gly | Arg | Gln | Ala | Gly | Leu | Arg | Leu | Ile | Arg | Pro | Trp | Val |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Arg | Arg | Glu | Gly | Lys | Ile | Asn | Phe | Tyr | Thr | Asn | Gly | Asp | Ser | Trp |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Gly | Leu | Arg | Pro | Ala | Ser | Ser | Val | Lys | Phe | Leu | Gly | Ser | Ala | Tyr |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Thr | Phe | Phe | Ser | Leu | Thr | Trp | His | Thr | Leu | Leu | Lys | Ala | Ser | Gln |
| | | | | 95 | | | | 100 | | | | | | 105 |
| Gly | Phe | Ser | Leu | Phe | Leu | Gly | Ser | Lys | Tyr | Leu | Glu | Leu | Gln | Glu |
| | | | | 110 | | | | 115 | | | | | | 120 |
| Pro | Ser | Trp | Ser | Gly | Pro | Cys | Pro | Pro | Gly | Gln | Leu | His | Cys | Thr |
| | | | | 125 | | | | 130 | | | | | | 135 |
| Cys | Gly | Val | Leu | Leu | Ser | Phe | Leu | | | | | | | |

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 <211> 1768
 <212> DNA
 <213> Homo sapiens

<400> 303
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<210> 304

<211> 109

<212> PRT

<213> Homo sapiens

<400> 304

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Trp | Trp | Leu | Val | Leu | Leu | Leu | Leu | Pro | Thr | Leu | Lys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Cys | Ser | Leu | Val | Thr | Ser | Leu | Tyr | Leu | Pro | Asn | Thr | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Ser | Leu | Trp | Leu | Trp | Pro | Lys | Pro | Asp | Leu | His | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Thr | Glu | Val | Ser | Thr | His | Thr | Val | Pro | Ser | Lys | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Ser | Pro | Cys | Trp | Pro | Leu | Ala | Gly | Ala | Val | Pro | Ser | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Ser | Arg | Leu | Glu | Ala | Leu | Thr | Arg | Ala | Val | Gln | Val | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Leu | Gly | Ser | Cys | Gly | Phe | Gln | Gly | Gly | Pro | Cys | Pro | Gly |
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Arg Arg Arg Asp

<210> 305

<211> 989

<212> DNA

<213> Homo sapiens

<400> 305

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<210> 306

<211> 262

<212> PRT

<213> Homo sapiens

<400> 306

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Gln | Pro | Val | Pro | Arg | Leu | Ser | Val | Pro | Ala | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Ser | Ala | Ala | Leu | Gly | Ala | Ala | Phe | Ala | Thr | Gly | Leu | Phe |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Leu | Gly | Arg | Arg | Cys | Pro | Pro | Trp | Arg | Gly | Arg | Arg | Glu | Gln | Cys |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Leu | Leu | Pro | Pro | Glu | Asp | Ser | Arg | Leu | Trp | Gln | Tyr | Leu | Leu | Ser |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Met | Arg | Glu | His | Pro | Ala | Leu | Arg | Ser | Leu | Arg | Leu | Leu | 65 | 70 | 75 |
| Thr | Leu | Glu | Gln | Pro | Gln | Gly | Asp | Ser | Met | Met | Thr | Cys | Glu | Gln | 80 | 85 | 90 |
| Ala | Gln | Leu | Leu | Ala | Asn | Leu | Ala | Arg | Leu | Ile | Gln | Ala | Lys | Lys | 95 | 100 | 105 |
| Ala | Leu | Asp | Leu | Gly | Thr | Phe | Thr | Gly | Tyr | Ser | Ala | Leu | Ala | Leu | 110 | 115 | 120 |
| Ala | Leu | Ala | Leu | Pro | Ala | Asp | Gly | Arg | Val | Val | Thr | Cys | Glu | Val | 125 | 130 | 135 |
| Asp | Ala | Gln | Pro | Pro | Glu | Leu | Gly | Arg | Pro | Leu | Trp | Arg | Gln | Ala | 140 | 145 | 150 |
| Glu | Ala | Glu | His | Lys | Ile | Asp | Leu | Arg | Leu | Lys | Pro | Ala | Leu | Glu | 155 | 160 | 165 |
| Thr | Leu | Asp | Glu | Leu | Leu | Ala | Ala | Gly | Glu | Ala | Gly | Thr | Phe | Asp | 170 | 175 | 180 |
| Val | Ala | Val | Val | Asp | Ala | Asp | Lys | Glu | Asn | Cys | Ser | Ala | Tyr | Tyr | 185 | 190 | 195 |
| Glu | Arg | Cys | Leu | Gln | Leu | Leu | Arg | Pro | Gly | Gly | Ile | Leu | Ala | Val | 200 | 205 | 210 |
| Leu | Arg | Val | Leu | Trp | Arg | Gly | Lys | Val | Leu | Gln | Pro | Pro | Lys | Gly | 215 | 220 | 225 |
| Asp | Val | Ala | Ala | Glu | Cys | Val | Arg | Asn | Leu | Asn | Glu | Arg | Ile | Arg | 230 | 235 | 240 |
| Arg | Asp | Val | Arg | Val | Tyr | Ile | Ser | Leu | Leu | Pro | Leu | Gly | Asp | Gly | 245 | 250 | 255 |
| Leu | Thr | Leu | Ala | Phe | Lys | Ile | | | | | | | | | 260 | | |

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<211> 2272

<212> DNA

<213> Homo sapiens

<400> 307

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gctaagatga agggctaccc tctactggcct gccaggatcg acgacatcgc 150
ggatggcgcc gtgaagcccc caccacaaca gtaccccatc tttttctttg 200
gcacacacga aacagccttc ctgggaccca aggacctgtt cccctacgac 250

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<210> 308

<211> 671

<212> PRT

<213> Homo sapiens

<400> 308

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| Met | Pro | His | Ala | Phe | Lys | Pro | Gly | Asp | Leu | Val | Phe | Ala | Lys | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Lys | Gly | Tyr | Pro | His | Trp | Pro | Ala | Arg | Ile | Asp | Asp | Ile | Ala | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ala | Val | Lys | Pro | Pro | Pro | Asn | Lys | Tyr | Pro | Ile | Phe | Phe | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Thr | His | Glu | Thr | Ala | Phe | Leu | Gly | Pro | Lys | Asp | Leu | Phe | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Asp | Lys | Cys | Lys | Asp | Lys | Tyr | Gly | Lys | Pro | Asn | Lys | Arg | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gly | Phe | Asn | Glu | Gly | Leu | Trp | Glu | Ile | Gln | Asn | Asn | Pro | His | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Tyr | Ser | Ala | Pro | Pro | Pro | Val | Ser | Ser | Ser | Asp | Ser | Glu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Glu | Ala | Asn | Pro | Ala | Asp | Gly | Ser | Asp | Ala | Asp | Glu | Asp | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Asp | Arg | Gly | Val | Met | Ala | Val | Thr | Ala | Val | Thr | Ala | Thr | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Ser | Asp | Arg | Met | Glu | Ser | Asp | Ser | Asp | Ser | Asp | Lys | Ser | Ser |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Glu | Lys | Gln | Gln | Ala | Lys | Pro | Val | Lys | Val | Glu | Arg | Thr | 440 | 445 | 450 |
| Arg | Lys | Arg | Ser | Glu | Gly | Phe | Ser | Met | Asp | Arg | Lys | Val | Glu | Lys | 455 | 460 | 465 |
| Lys | Lys | Glu | Pro | Ser | Val | Glu | Glu | Lys | Leu | Gln | Lys | Leu | His | Ser | 470 | 475 | 480 |
| Glu | Ile | Lys | Phe | Ala | Leu | Lys | Val | Asp | Ser | Pro | Asp | Val | Lys | Arg | 485 | 490 | 495 |
| Cys | Leu | Asn | Ala | Leu | Glu | Glu | Leu | Gly | Thr | Leu | Gln | Val | Thr | Ser | 500 | 505 | 510 |
| Gln | Ile | Leu | Gln | Lys | Asn | Thr | Asp | Val | Val | Ala | Thr | Leu | Lys | Lys | 515 | 520 | 525 |
| Ile | Arg | Arg | Tyr | Lys | Ala | Asn | Lys | Asp | Val | Met | Glu | Lys | Ala | Ala | 530 | 535 | 540 |
| Glu | Val | Tyr | Thr | Arg | Leu | Lys | Ser | Arg | Val | Leu | Gly | Pro | Lys | Ile | 545 | 550 | 555 |
| Glu | Ala | Val | Gln | Lys | Val | Asn | Lys | Ala | Gly | Met | Glu | Lys | Glu | Lys | 560 | 565 | 570 |
| Ala | Glu | Glu | Lys | Leu | Ala | Gly | Glu | Glu | Leu | Ala | Gly | Glu | Glu | Ala | 575 | 580 | 585 |
| Pro | Gln | Glu | Lys | Ala | Glu | Asp | Lys | Pro | Ser | Thr | Asp | Leu | Ser | Ala | 590 | 595 | 600 |
| Pro | Val | Asn | Gly | Glu | Ala | Thr | Ser | Gln | Lys | Gly | Glu | Ser | Ala | Glu | 605 | 610 | 615 |
| Asp | Lys | Glu | His | Glu | Glu | Gly | Arg | Asp | Ser | Glu | Glu | Gly | Pro | Arg | 620 | 625 | 630 |
| Cys | Gly | Ser | Ser | Glu | Asp | Leu | His | Asp | Ser | Val | Arg | Glu | Gly | Pro | 635 | 640 | 645 |
| Asp | Leu | Asp | Arg | Pro | Gly | Ser | Asp | Arg | Gln | Glu | Arg | Glu | Arg | Ala | 650 | 655 | 660 |
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<211> 3871

<212> DNA

<213> Homo sapiens

<400> 309

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<212> PRT

<213> Homo sapiens

<400> 310

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| Met | Asn | Ala | Asn | Lys | Asp | Glu | Arg | Leu | Lys | Ala | Arg | Ser | Gln | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | His | Leu | Phe | Pro | Ala | Leu | Met | Met | Leu | Ser | Met | Thr | Met | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Leu | Pro | Val | Thr | Gly | Thr | Leu | Lys | Gln | Asn | Ile | Pro | Arg | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Leu | Thr | Tyr | Lys | Asp | Leu | Leu | Leu | Ser | Asn | Ser | Cys | Ile | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Leu | Gly | Ser | Ser | Glu | Gly | Leu | Asp | Phe | Gln | Thr | Leu | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Glu | Glu | Arg | Gly | Arg | Leu | Leu | Leu | Gly | Ala | Lys | Asp | His | Ile |

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| | 80 | 85 | 90 |
|-----------------|---|-----|-----|
| Phe Leu Leu Ser | Leu Val Asp Leu Asn Lys Asn Phe Lys Lys Ile | | |
| | 95 | 100 | 105 |
| Tyr Trp Pro Ala | Ala Lys Glu Arg Val Glu Leu Cys Lys Leu Ala | | |
| | 110 | 115 | 120 |
| Gly Lys Asp Ala | Asn Thr Glu Cys Ala Asn Phe Ile Arg Val Leu | | |
| | 125 | 130 | 135 |
| Gln Pro Tyr Asn | Lys Thr His Ile Tyr Val Cys Gly Thr Gly Ala | | |
| | 140 | 145 | 150 |
| Phe His Pro Ile | Cys Gly Tyr Ile Asp Leu Gly Val Tyr Lys Glu | | |
| | 155 | 160 | 165 |
| Asp Ile Ile Phe | Lys Leu Asp Thr His Asn Leu Glu Ser Gly Arg | | |
| | 170 | 175 | 180 |
| Leu Lys Cys Pro | Phe Asp Pro Gln Gln Pro Phe Ala Ser Val Met | | |
| | 185 | 190 | 195 |
| Thr Asp Glu Tyr | Leu Tyr Ser Gly Thr Ala Ser Asp Phe Leu Gly | | |
| | 200 | 205 | 210 |
| Lys Asp Thr Ala | Phe Thr Arg Ser Leu Gly Pro Thr His Asp His | | |
| | 215 | 220 | 225 |
| His Tyr Ile Arg | Thr Asp Ile Ser Glu His Tyr Trp Leu Asn Gly | | |
| | 230 | 235 | 240 |
| Ala Lys Phe Ile | Gly Thr Phe Phe Ile Pro Asp Thr Tyr Asn Pro | | |
| | 245 | 250 | 255 |
| Asp Asp Asp Lys | Ile Tyr Phe Phe Phe Arg Glu Ser Ser Gln Glu | | |
| | 260 | 265 | 270 |
| Gly Ser Thr Ser | Asp Lys Thr Ile Leu Ser Arg Val Gly Arg Val | | |
| | 275 | 280 | 285 |
| Cys Lys Asn Asp | Val Gly Gly Gln Arg Ser Leu Ile Asn Lys Trp | | |
| | 290 | 295 | 300 |
| Thr Thr Phe Leu | Lys Ala Arg Leu Ile Cys Ser Ile Pro Gly Ser | | |
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| Asp Gly Ala Asp | Thr Tyr Phe Asp Glu Leu Gln Asp Ile Tyr Leu | | |
| | 320 | 325 | 330 |
| Leu Pro Thr Arg | Asp Glu Arg Asn Pro Val Val Tyr Gly Val Phe | | |
| | 335 | 340 | 345 |
| Thr Thr Thr Ser | Ser Ile Phe Lys Gly Ser Ala Val Cys Val Tyr | | |
| | 350 | 355 | 360 |
| Ser Met Ala Asp | Ile Arg Ala Val Phe Asn Gly Pro Tyr Ala His | | |
| | 365 | 370 | 375 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Glu | Ser | Ala | Asp | His | Arg | Trp | Val | Gln | Tyr | Asp | Gly | Arg | Ile | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Pro | Tyr | Pro | Arg | Pro | Gly | Thr | Cys | Pro | Ser | Lys | Thr | Tyr | Asp | Pro | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Leu | Ile | Lys | Ser | Thr | Arg | Asp | Phe | Pro | Asp | Asp | Val | Ile | Ser | Phe | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Ile | Lys | Arg | His | Ser | Val | Met | Tyr | Lys | Ser | Val | Tyr | Pro | Val | Ala | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Gly | Gly | Pro | Thr | Phe | Lys | Arg | Ile | Asn | Val | Asp | Tyr | Arg | Leu | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Gln | Ile | Val | Val | Asp | His | Val | Ile | Ala | Glu | Asp | Gly | Gln | Tyr | Asp | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Val | Met | Phe | Leu | Gly | Thr | Asp | Ile | Gly | Thr | Val | Leu | Lys | Val | Val | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Ser | Ile | Ser | Lys | Glu | Lys | Trp | Asn | Met | Glu | Glu | Val | Val | Leu | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Glu | Leu | Gln | Ile | Phe | Lys | His | Ser | Ser | Ile | Ile | Leu | Asn | Met | Glu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Leu | Ser | Leu | Lys | Gln | Gln | Gln | Leu | Tyr | Ile | Gly | Ser | Arg | Asp | Gly | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Leu | Val | Gln | Leu | Ser | Leu | His | Arg | Cys | Asp | Thr | Tyr | Gly | Lys | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Cys | Ala | Asp | Cys | Cys | Leu | Ala | Arg | Asp | Pro | Tyr | Cys | Ala | Trp | Asp | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gly | Asn | Ala | Cys | Ser | Arg | Tyr | Ala | Pro | Thr | Ser | Lys | Arg | Arg | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Arg | Arg | Gln | Asp | Val | Lys | Tyr | Gly | Asp | Pro | Ile | Thr | Gln | Cys | Trp | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Asp | Ile | Glu | Asp | Ser | Ile | Ser | His | Glu | Thr | Ala | Asp | Glu | Lys | Val | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ile | Phe | Gly | Ile | Glu | Phe | Asn | Ser | Thr | Phe | Leu | Glu | Cys | Ile | Pro | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Lys | Ser | Gln | Gln | Ala | Thr | Ile | Lys | Trp | Tyr | Ile | Gln | Arg | Ser | Gly | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Asp | Glu | His | Arg | Glu | Glu | Leu | Lys | Pro | Asp | Glu | Arg | Ile | Ile | Lys | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Thr | Glu | Tyr | Gly | Leu | Leu | Ile | Arg | Ser | Leu | Gln | Lys | Lys | Asp | Ser | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Gly | Met | Tyr | Tyr | Cys | Lys | Ala | Gln | Glu | His | Thr | Phe | Ile | His | Thr | |

| 665 | | | | | 670 | | | | | 675 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Lys | Leu | Thr | Leu | Asn | Val | Ile | Glu | Asn | Glu | Gln | Met | Glu |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Asn | Thr | Gln | Arg | Ala | Glu | His | Glu | Glu | Gly | Gln | Val | Lys | Asp | Leu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Leu | Ala | Glu | Ser | Arg | Leu | Arg | Tyr | Lys | Asp | Tyr | Ile | Gln | Ile | Leu |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Ser | Ser | Pro | Asn | Phe | Ser | Leu | Asp | Gln | Tyr | Cys | Glu | Gln | Met | Trp |
| | | | | 725 | | | | | 730 | | | | | 735 |
| His | Arg | Glu | Lys | Arg | Arg | Gln | Arg | Asn | Lys | Gly | Gly | Pro | Lys | Trp |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Lys | His | Met | Gln | Glu | Met | Lys | Lys | Lys | Arg | Asn | Arg | Arg | His | His |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Arg | Asp | Leu | Asp | Glu | Leu | Pro | Arg | Ala | Val | Ala | Thr | | | |
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<213> Homo sapiens

<400> 315

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| Met | Gln | Leu | Ala | Lys | Tyr | Gln | Ser | His | Ser | Lys | Ser | Cys | Pro | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Phe | Pro | Pro | Thr | Pro | Val | Leu | Cys | Leu | Pro | Asn | Gln | Val | Leu | | 20 | 25 | 30 |
| Gln | Arg | Leu | Glu | Gln | Arg | Arg | Gln | Gln | Ala | Ser | Glu | Arg | Glu | Ala | | 35 | 40 | 45 |
| Pro | Ser | Ile | Glu | Gln | Arg | Leu | Gln | Glu | Val | Arg | Glu | Ser | Ile | Arg | | 50 | 55 | 60 |
| Arg | Ala | Gln | Val | Ser | Gln | Val | Lys | Gly | Ala | Ala | Arg | Leu | Ala | Leu | | 65 | 70 | 75 |
| Leu | Gln | Gly | Ala | Gly | Leu | Asp | Val | Glu | Arg | Trp | Leu | Lys | Pro | Ala | | 80 | 85 | 90 |
| Met | Thr | Gln | Ala | Gln | Asp | Glu | Val | Glu | Gln | Glu | Arg | Arg | Leu | Ser | | 95 | 100 | 105 |
| Glu | Ala | Arg | Leu | Ser | Gln | Arg | Asp | Leu | Ser | Pro | Thr | Ala | Glu | Asp | | 110 | 115 | 120 |
| Ala | Glu | Leu | Ser | Asp | Phe | Glu | Glu | Cys | Glu | Glu | Thr | Gly | Glu | Leu | | 125 | 130 | 135 |
| Phe | Glu | Glu | Pro | Ala | Pro | Gln | Ala | Leu | Ala | Thr | Arg | Ala | Leu | Pro | | 140 | 145 | 150 |
| Cys | Pro | Ala | His | Val | Val | Phe | Arg | Tyr | Gln | Ala | Gly | Arg | Glu | Asp | | 155 | 160 | 165 |
| Glu | Leu | Thr | Ile | Thr | Glu | Gly | Glu | Trp | Leu | Glu | Val | Ile | Glu | Glu | | 170 | 175 | 180 |
| Gly | Asp | Ala | Asp | Glu | Trp | Val | Lys | Ala | Arg | Asn | Gln | His | Gly | Glu | | 185 | 190 | 195 |
| Val | Gly | Phe | Val | Pro | Glu | Arg | Tyr | Leu | Asn | Phe | Pro | Asp | Leu | Ser | | 200 | 205 | 210 |
| Leu | Pro | Glu | Ser | Ser | Gln | Asp | Ser | Asp | Asn | Pro | Cys | Gly | Ala | Glu | | 215 | 220 | 225 |
| Pro | Thr | Ala | Phe | Leu | Ala | Gln | Ala | Leu | Tyr | Ser | Tyr | Thr | Gly | Gln | | 230 | 235 | 240 |
| Ser | Ala | Glu | Glu | Leu | Ser | Phe | Pro | Glu | Gly | Ala | Leu | Ile | Arg | Leu | | 245 | 250 | 255 |
| Leu | Pro | Arg | Ala | Gln | Asp | Gly | Val | Asp | Asp | Gly | Phe | Trp | Arg | Gly | | 260 | 265 | 270 |
| Glu | Phe | Gly | Gly | Arg | Val | Gly | Val | Phe | Pro | Ser | Leu | Leu | Val | Glu | | 275 | 280 | 285 |
| Glu | Leu | Leu | Gly | Pro | Pro | Gly | Pro | Pro | Glu | Leu | Ser | Asp | Pro | Glu | | 290 | 295 | 300 |
| Gln | Met | Leu | Pro | Ser | Pro | Ser | Pro | Pro | Ser | Phe | Ser | Pro | Pro | Ala | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|---------|-----|-----|
| | 305 | | 310 | | 315 |
| Pro Thr Ser Val | Leu Asp Gly Pro Pro | Ala Pro Val Leu Pro | Gly | | |
| | 320 | | 325 | | 330 |
| Asp Lys Ala Leu | Asp Phe Pro Gly Phe | Leu Asp Met Met | Ala Pro | | |
| | 335 | | 340 | | 345 |
| Arg Leu Arg Pro | Met Arg Pro Pro Pro | Pro Pro Pro | Ala Lys | Ala | |
| | 350 | | 355 | | 360 |
| Pro Asp Pro Gly | His Pro Asp Pro | Leu Thr | | | |
| | 365 | | 370 | | |

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 <212> DNA
 <213> Homo sapiens

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<211> 837

<212> PRT

<213> Homo sapiens

<400> 317

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Gln | Thr | Gly | Ser | His | Pro | Gly | Arg | Gly | Leu | Ala | Gly | Arg | 1 | 5 | 10 | 15 |
| Trp | Leu | Trp | Gly | Ala | Gln | Pro | Cys | Leu | Leu | Leu | Pro | Ile | Val | Pro | 20 | 25 | 30 | |
| Leu | Ser | Trp | Leu | Val | Trp | Leu | Leu | Leu | Leu | Leu | Ala | Ser | Leu | 35 | 40 | 45 | | |
| Leu | Pro | Ser | Ala | Arg | Leu | Ala | Ser | Pro | Leu | Pro | Arg | Glu | Glu | Glu | 50 | 55 | 60 | |
| Ile | Val | Phe | Pro | Glu | Lys | Leu | Asn | Gly | Ser | Val | Leu | Pro | Gly | Ser | 65 | 70 | 75 | |
| Gly | Ala | Pro | Ala | Arg | Leu | Leu | Cys | Arg | Leu | Gln | Ala | Phe | Gly | Glu | 80 | 85 | 90 | |
| Thr | Leu | Leu | Leu | Glu | Leu | Glu | Gln | Asp | Ser | Gly | Val | Gln | Val | Glu | 95 | 100 | 105 | |
| Gly | Leu | Thr | Val | Gln | Tyr | Leu | Gly | Gln | Ala | Pro | Glu | Leu | Leu | Gly | 110 | 115 | 120 | |
| Gly | Ala | Glu | Pro | Gly | Thr | Tyr | Leu | Thr | Gly | Thr | Ile | Asn | Gly | Asp | 125 | 130 | 135 | |
| Pro | Glu | Ser | Val | Ala | Ser | Leu | His | Trp | Asp | Gly | Gly | Ala | Leu | Leu | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 140 | | | | | | 145 | | | | | 150 |
| Gly | Val | Leu | Gln | Tyr | Arg | Gly | Ala | Glu | Leu | His | Leu | Gln | Pro | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Gly | Gly | Thr | Pro | Asn | Ser | Ala | Gly | Gly | Pro | Gly | Ala | His | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Arg | Arg | Lys | Ser | Pro | Ala | Ser | Gly | Gln | Gly | Pro | Met | Cys | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | Lys | Ala | Pro | Leu | Gly | Ser | Pro | Ser | Pro | Arg | Pro | Arg | Arg | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Arg | Phe | Ala | Ser | Leu | Ser | Arg | Phe | Val | Glu | Thr | Leu | Val | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Asp | Asp | Lys | Met | Ala | Ala | Phe | His | Gly | Ala | Gly | Leu | Lys | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Tyr | Leu | Leu | Thr | Val | Met | Ala | Ala | Ala | Ala | Lys | Ala | Phe | Lys | His | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Ile | Arg | Asn | Pro | Val | Ser | Leu | Val | Val | Thr | Arg | Leu | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ile | Leu | Gly | Ser | Gly | Glu | Glu | Gly | Pro | Gln | Val | Gly | Pro | Ser | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Gln | Thr | Leu | Arg | Ser | Phe | Cys | Ala | Trp | Gln | Arg | Gly | Leu | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Thr | Pro | Glu | Asp | Ser | Gly | Pro | Asp | His | Phe | Asp | Thr | Ala | Ile | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Thr | Arg | Gln | Asp | Leu | Cys | Gly | Val | Ser | Thr | Cys | Asp | Thr | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gly | Met | Ala | Asp | Val | Gly | Thr | Val | Cys | Asp | Pro | Ala | Arg | Ser | Cys | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ala | Ile | Val | Glu | Asp | Asp | Gly | Leu | Gln | Ser | Ala | Phe | Thr | Ala | Ala | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| His | Glu | Leu | Gly | His | Val | Phe | Asn | Met | Leu | His | Asp | Asn | Ser | Lys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Pro | Cys | Ile | Ser | Leu | Asn | Gly | Pro | Leu | Ser | Thr | Ser | Arg | His | Val | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Met | Ala | Pro | Val | Met | Ala | His | Val | Asp | Pro | Glu | Glu | Pro | Trp | Ser | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Pro | Cys | Ser | Ala | Arg | Phe | Ile | Thr | Asp | Phe | Leu | Asp | Asn | Gly | Tyr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Gly | His | Cys | Leu | Leu | Asp | Lys | Pro | Glu | Ala | Pro | Leu | His | Leu | Pro | |
| | | | | 425 | | | | | 430 | | | | | 435 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Thr | Phe | Pro | Gly | Lys | Asp | Tyr | Asp | Ala | Asp | Arg | Gln | Cys | Gln | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Leu | Thr | Phe | Gly | Pro | Asp | Ser | Arg | His | Cys | Pro | Gln | Leu | Pro | Pro | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Pro | Cys | Ala | Ala | Leu | Trp | Cys | Ser | Gly | His | Leu | Asn | Gly | His | Ala | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Met | Cys | Gln | Thr | Lys | His | Ser | Pro | Trp | Ala | Asp | Gly | Thr | Pro | Cys | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Gly | Pro | Ala | Gln | Ala | Cys | Met | Gly | Gly | Arg | Cys | Leu | His | Met | Asp | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Gln | Leu | Gln | Asp | Phe | Asn | Ile | Pro | Gln | Ala | Gly | Gly | Trp | Gly | Pro | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Trp | Gly | Pro | Trp | Gly | Asp | Cys | Ser | Arg | Thr | Cys | Gly | Gly | Gly | Val | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Gln | Phe | Ser | Ser | Arg | Asp | Cys | Thr | Arg | Pro | Val | Pro | Arg | Asn | Gly | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gly | Lys | Tyr | Cys | Glu | Gly | Arg | Arg | Thr | Arg | Phe | Arg | Ser | Cys | Asn | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Thr | Glu | Asp | Cys | Pro | Thr | Gly | Ser | Ala | Leu | Thr | Phe | Arg | Glu | Glu | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Gln | Cys | Ala | Ala | Tyr | Asn | His | Arg | Thr | Asp | Leu | Phe | Lys | Ser | Phe | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Pro | Gly | Pro | Met | Asp | Trp | Val | Pro | Arg | Tyr | Thr | Gly | Val | Ala | Pro | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Gln | Asp | Gln | Cys | Lys | Leu | Thr | Cys | Gln | Ala | Arg | Ala | Leu | Gly | Tyr | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Tyr | Tyr | Val | Leu | Glu | Pro | Arg | Val | Val | Asp | Gly | Thr | Pro | Cys | Ser | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Pro | Asp | Ser | Ser | Ser | Val | Cys | Val | Gln | Gly | Arg | Cys | Ile | His | Ala | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Gly | Cys | Asp | Arg | Ile | Ile | Gly | Ser | Lys | Lys | Lys | Phe | Asp | Lys | Cys | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Met | Val | Cys | Gly | Gly | Asp | Gly | Ser | Gly | Cys | Ser | Lys | Gln | Ser | Gly | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Ser | Phe | Arg | Lys | Phe | Arg | Tyr | Gly | Tyr | Asn | Asn | Val | Val | Thr | Ile | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Pro | Ala | Gly | Ala | Thr | His | Ile | Leu | Val | Arg | Gln | Gln | Gly | Asn | Pro | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Gly | His | Arg | Ser | Ile | Tyr | Leu | Ala | Leu | Lys | Leu | Pro | Asp | Gly | Ser | |

| | | |
|---|-----|-----|
| 725 | 730 | 735 |
| Tyr Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp | | |
| 740 | 745 | 750 |
| Val Val Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser Gly Ala Thr | | |
| 755 | 760 | 765 |
| Ala Ala Ser Glu Thr Leu Ser Gly His Gly Pro Leu Ala Gln Pro | | |
| 770 | 775 | 780 |
| Leu Thr Leu Gln Val Leu Val Ala Gly Asn Pro Gln Asp Thr Arg | | |
| 785 | 790 | 795 |
| Leu Arg Tyr Ser Phe Phe Val Pro Arg Pro Thr Pro Ser Thr Pro | | |
| 800 | 805 | 810 |
| Arg Pro Thr Pro Gln Asp Trp Leu His Arg Arg Ala Gln Ile Leu | | |
| 815 | 820 | 825 |
| Glu Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg Lys | | |
| 830 | 835 | |

<210> 318
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 318
 ccctgaagct gccagatggc tcc 23

<210> 319
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 319
 ctgtgctctt cgggtgcagcc agtc 24

<210> 320
 <211> 43
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-43
 <223> Synthetic construct.

<400> 320
ccacagatgt ggtactgcct ggggcagtca gcttgcgcta cag 43

<210> 321
<211> 1197
<212> DNA
<213> Homo sapiens

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ctaaatgcag aagcttttaa atccaagaaa atatgtaaat cacttaagat 150
ttgtggactg gtgttttgga tcctggccct aactctaatt gtctgtttt 200
gggggagcaa gcacttctgg ccggaggtag ccaaaaaagc ctatgacatg 250
gagcacactt tctacagcaa tggagagaag aagaagattt acatggaaat 300
tgatcctgtg accagaactg aaatattcag aagcggaaat ggactgatg 350
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ctttctttga acagtcagtg atttgggtcc cagcagaaaa gcctattgaa 550
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<210> 322

<211> 317
 <212> PRT
 <213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Lys | Asn | Pro | Pro | Glu | Asn | Cys | Glu | Asp | Cys | His | Ile | Leu | 1 | 5 | 10 | 15 |
| Asn | Ala | Glu | Ala | Phe | Lys | Ser | Lys | Lys | Ile | Cys | Lys | Ser | Leu | Lys | 20 | 25 | 30 | |
| Ile | Cys | Gly | Leu | Val | Phe | Gly | Ile | Leu | Ala | Leu | Thr | Leu | Ile | Val | 35 | 40 | 45 | |
| Leu | Phe | Trp | Gly | Ser | Lys | His | Phe | Trp | Pro | Glu | Val | Pro | Lys | Lys | 50 | 55 | 60 | |
| Ala | Tyr | Asp | Met | Glu | His | Thr | Phe | Tyr | Ser | Asn | Gly | Glu | Lys | Lys | 65 | 70 | 75 | |
| Lys | Ile | Tyr | Met | Glu | Ile | Asp | Pro | Val | Thr | Arg | Thr | Glu | Ile | Phe | 80 | 85 | 90 | |
| Arg | Ser | Gly | Asn | Gly | Thr | Asp | Glu | Thr | Leu | Glu | Val | His | Asp | Phe | 95 | 100 | 105 | |
| Lys | Asn | Gly | Tyr | Thr | Gly | Ile | Tyr | Phe | Val | Gly | Leu | Gln | Lys | Cys | 110 | 115 | 120 | |
| Phe | Ile | Lys | Thr | Gln | Ile | Lys | Val | Ile | Pro | Glu | Phe | Ser | Glu | Pro | 125 | 130 | 135 | |
| Glu | Glu | Glu | Ile | Asp | Glu | Asn | Glu | Glu | Ile | Thr | Thr | Thr | Phe | Phe | 140 | 145 | 150 | |
| Glu | Gln | Ser | Val | Ile | Trp | Val | Pro | Ala | Glu | Lys | Pro | Ile | Glu | Asn | 155 | 160 | 165 | |
| Arg | Asp | Phe | Leu | Lys | Asn | Ser | Lys | Ile | Leu | Glu | Ile | Cys | Asp | Asn | 170 | 175 | 180 | |
| Val | Thr | Met | Tyr | Trp | Ile | Asn | Pro | Thr | Leu | Ile | Ser | Val | Ser | Glu | 185 | 190 | 195 | |
| Leu | Gln | Asp | Phe | Glu | Glu | Glu | Gly | Glu | Asp | Leu | His | Phe | Pro | Ala | 200 | 205 | 210 | |
| Asn | Glu | Lys | Lys | Gly | Ile | Glu | Gln | Asn | Glu | Gln | Trp | Val | Val | Pro | 215 | 220 | 225 | |
| Gln | Val | Lys | Val | Glu | Lys | Thr | Arg | His | Ala | Arg | Gln | Ala | Ser | Glu | 230 | 235 | 240 | |
| Glu | Glu | Leu | Pro | Ile | Asn | Asp | Tyr | Thr | Glu | Asn | Gly | Ile | Glu | Phe | 245 | 250 | 255 | |
| Asp | Pro | Met | Leu | Asp | Glu | Arg | Gly | Tyr | Cys | Cys | Ile | Tyr | Cys | Arg | 260 | 265 | 270 | |

Arg Gly Asn Arg Tyr Cys Arg Arg Val Cys Glu Pro Leu Leu Gly
275 280 285

Tyr Tyr Pro Tyr Pro Tyr Cys Tyr Gln Gly Gly Arg Val Ile Cys
290 295 300

Arg Val Ile Met Pro Cys Asn Trp Trp Val Ala Arg Met Leu Gly
305 310 315

Arg Val

<210> 323

<211> 1174

<212> DNA

<213> Homo sapiens

<400> 323

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ggcctgtcag cttctgggct tcctgtctcag cttcctgggc atggtgggca 150
cgttgatcac caccatcctg ccgcactggc ggaggacagc gcacgtgggc 200
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ttctgggcaa tttttgtatc caaggaaata atgtgaatgc gaggaatgt 950
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<210> 324
<211> 239
<212> PRT
<213> Homo sapiens

<400> 324
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Leu Gly Met Val Gly Thr Leu Ile Thr Thr Ile Leu Pro His Trp
20 25 30
Arg Arg Thr Ala His Val Gly Thr Asn Ile Leu Thr Ala Val Ser
35 40 45
Tyr Leu Lys Gly Leu Trp Met Glu Cys Val Trp His Ser Thr Gly
50 55 60
Ile Tyr Gln Cys Gln Ile Tyr Arg Ser Leu Leu Ala Leu Pro Gln
65 70 75
Asp Leu Gln Ala Ala Arg Ala Leu Met Val Ile Ser Cys Leu Leu
80 85 90
Ser Gly Ile Ala Cys Ala Cys Ala Val Ile Gly Met Lys Cys Thr
95 100 105
Arg Cys Ala Lys Gly Thr Pro Ala Lys Thr Thr Phe Ala Ile Leu
110 115 120
Gly Gly Thr Leu Phe Ile Leu Ala Gly Leu Leu Cys Met Val Ala
125 130 135
Val Ser Trp Thr Thr Asn Asp Val Val Gln Asn Phe Tyr Asn Pro
140 145 150
Leu Leu Pro Ser Gly Met Lys Phe Glu Ile Gly Gln Ala Leu Tyr
155 160 165
Leu Gly Phe Ile Ser Ser Ser Leu Ser Leu Ile Gly Gly Thr Leu
170 175 180
Leu Cys Leu Ser Cys Gln Asp Glu Ala Pro Tyr Arg Pro Tyr Gln
185 190 195
Ala Pro Pro Arg Ala Thr Thr Thr Thr Ala Asn Thr Ala Pro Ala
200 205 210
Tyr Gln Pro Pro Ala Ala Tyr Lys Asp Asn Arg Ala Pro Ser Val
215 220 225

Thr Ser Ala Thr His Ser Gly Tyr Arg Leu Asn Asp Tyr Val
 230 235

<210> 325
 <211> 2121
 <212> DNA
 <213> Homo sapiens

<400> 325
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 gcatcgcggc caccgggatg gacatgtgga gcacccagga cctgtacgac 200
 aaccccgta cctccgtgtt ccagtacgaa gggctctgga ggagctgcgt 250
 gaggcagagt tcaggcttca ccgaatgcag gccctatttc accatcctgg 300
 gacttccagc catgctgcag gcagtgcgag ccctgatgat cgtaggcatc 350
 gtctctgggtg ccattggcct cctggtatcc atctttgccc tgaaatgcat 400
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 gggggtgtga tgatgtgcat cgcctgccg ggcctggcac cagaagaaac 700
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 agcctggagg cttcaaggcc agcactggct ttgggtccaa caccaaaaac 800
 aagaagatat acgatggagg tgcccgacac gaggacgagg tacaatctta 850
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 gagccatgat cacaccactg cactccagcc aggtgacata gcgagatcct 2050
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<210> 326

<211> 261

<212> PRT

<213> Homo sapiens

<400> 326

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Leu Gly Leu Ala Gly Cys Ile Ala Ala Thr Gly Met Asp Met Trp
 20 25 30

Ser Thr Gln Asp Leu Tyr Asp Asn Pro Val Thr Ser Val Phe Gln
 35 40 45

Tyr Glu Gly Leu Trp Arg Ser Cys Val Arg Gln Ser Ser Gly Phe
 50 55 60

Thr Glu Cys Arg Pro Tyr Phe Thr Ile Leu Gly Leu Pro Ala Met
 65 70 75

Leu Gln Ala Val Arg Ala Leu Met Ile Val Gly Ile Val Leu Gly

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Ala | Ile | Gly | Leu | Leu | Val | Ser | Ile | Phe | Ala | Leu | Lys | Cys | Ile | Arg | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ile | Gly | Ser | Met | Glu | Asp | Ser | Ala | Lys | Ala | Asn | Met | Thr | Leu | Thr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Ser | Gly | Ile | Met | Phe | Ile | Val | Ser | Gly | Leu | Cys | Ala | Ile | Ala | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Ser | Val | Phe | Ala | Asn | Met | Leu | Val | Thr | Asn | Phe | Trp | Met | Ser | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Thr | Ala | Asn | Met | Tyr | Thr | Gly | Met | Gly | Gly | Met | Val | Gln | Thr | Val | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Gln | Thr | Arg | Tyr | Thr | Phe | Gly | Ala | Ala | Leu | Phe | Val | Gly | Trp | Val | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ala | Gly | Gly | Leu | Thr | Leu | Ile | Gly | Gly | Val | Met | Met | Cys | Ile | Ala | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Cys | Arg | Gly | Leu | Ala | Pro | Glu | Glu | Thr | Asn | Tyr | Lys | Ala | Val | Ser | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Tyr | His | Ala | Ser | Gly | His | Ser | Val | Ala | Tyr | Lys | Pro | Gly | Gly | Phe | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Lys | Ala | Ser | Thr | Gly | Phe | Gly | Ser | Asn | Thr | Lys | Asn | Lys | Lys | Ile | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Tyr | Asp | Gly | Gly | Ala | Arg | Thr | Glu | Asp | Glu | Val | Gln | Ser | Tyr | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ser | Lys | His | Asp | Tyr | Val | | | | | | | | | | | | | | |
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<210> 327
 <211> 2010
 <212> DNA
 <213> Homo sapiens

<400> 327
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 ccctgtgagc tgggttgcca atgccatcat cagagatttc tataactcaa 550
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 tggaccacgg cactggtgct gattgttgga ggagctctgt tctgctgcgt 650
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 atcgcacaac ccaaaaaagt tatcacaccg gaaagaagtc accgagcgtc 750
 tactccagaa gtcagtatgt gtagttgtgt atgttttttt aactttacta 800
 taaagccatg caaatgacaa aaatctatat tactttctca aaatggaccc 850
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 actgtgcac agctatttat gattctataa gctatttcag cagaatgaga 950
 tattaaaccc aatgctttga ttgttctaga aagtatagta atttgttttc 1000
 taaggtggtt caagcatcta ctctttttat catttacttc aaaatgacat 1050
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 tatgtacata gatgagtgt acatttatat ctccataga gacatgctta 1150
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 ttttactaaa atctgtaaaat actgtatttt tctgtttatt ccaaatttga 1900
 tgaaactgac aatccaattt gaaagtttgt gtcgacgtct gtctagctta 1950
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<210> 328
 <211> 225
 <212> PRT
 <213> Homo sapiens

<400> 328

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Thr | His | Ala | Leu | Glu | Ile | Ala | Gly | Leu | Phe | Leu | Gly | Gly | 1 | 5 | 10 | 15 |
| Val | Gly | Met | Val | Gly | Thr | Val | Ala | Val | Thr | Val | Met | Pro | Gln | Trp | 20 | 25 | 30 | |
| Arg | Val | Ser | Ala | Phe | Ile | Glu | Asn | Asn | Ile | Val | Val | Phe | Glu | Asn | 35 | 40 | 45 | |
| Phe | Trp | Glu | Gly | Leu | Trp | Met | Asn | Cys | Val | Arg | Gln | Ala | Asn | Ile | 50 | 55 | 60 | |
| Arg | Met | Gln | Cys | Lys | Ile | Tyr | Asp | Ser | Leu | Leu | Ala | Leu | Ser | Pro | 65 | 70 | 75 | |
| Asp | Leu | Gln | Ala | Ala | Arg | Gly | Leu | Met | Cys | Ala | Ala | Ser | Val | Met | 80 | 85 | 90 | |
| Ser | Phe | Leu | Ala | Phe | Met | Met | Ala | Ile | Leu | Gly | Met | Lys | Cys | Thr | 95 | 100 | 105 | |
| Arg | Cys | Thr | Gly | Asp | Asn | Glu | Lys | Val | Lys | Ala | His | Ile | Leu | Leu | 110 | 115 | 120 | |
| Thr | Ala | Gly | Ile | Ile | Phe | Ile | Ile | Thr | Gly | Met | Val | Val | Leu | Ile | 125 | 130 | 135 | |
| Pro | Val | Ser | Trp | Val | Ala | Asn | Ala | Ile | Ile | Arg | Asp | Phe | Tyr | Asn | 140 | 145 | 150 | |
| Ser | Ile | Val | Asn | Val | Ala | Gln | Lys | Arg | Glu | Leu | Gly | Glu | Ala | Leu | 155 | 160 | 165 | |
| Tyr | Leu | Gly | Trp | Thr | Thr | Ala | Leu | Val | Leu | Ile | Val | Gly | Gly | Ala | 170 | 175 | 180 | |
| Leu | Phe | Cys | Cys | Val | Phe | Cys | Cys | Asn | Glu | Lys | Ser | Ser | Ser | Tyr | 185 | 190 | 195 | |
| Arg | Tyr | Ser | Ile | Pro | Ser | His | Arg | Thr | Thr | Gln | Lys | Ser | Tyr | His | 200 | 205 | 210 | |

Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser Arg Ser Gln Tyr Val
 215 220 225

<210> 329
 <211> 1315
 <212> DNA
 <213> Homo sapiens

<400> 329
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 gaccgctttc atcggcaaca gcatcgtggg ggcccagggt gtgtgggagg 150
 gcctgtggat gtcctgcgtg gtgcagagca ccggccagat gcagtgaag 200
 gtgtacgact cactgctggc gctgccacag gacctgcagg ctgcacgtgc 250
 cctctgtgtc atcgccctcc ttgtggccct gttcggcttg ctggtctacc 300
 ttgctggggc caagtgtacc acctgtgtgg aggagaagga ttccaaggcc 350
 cgctgtgtgc tcacctctgg gattgtcttt gtcattctcag gggctcctgac 400
 gctaatcccc gtgtgctgga cggcgcatgc catcatccgg gacttctata 450
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 cagctatgta gacccccgcc cccacctoca aactgcacc cttctgccct 1250

gccccctcg tctcaccccc tttaactca catttttattc aaataaagca 1300

tgttttgta gtgca 1315

<210> 330

<211> 220

<212> PRT

<213> Homo sapiens

<400> 330

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Leu Gly Trp Val Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp
20 25 30

Lys Val Thr Ala Phe Ile Gly Asn Ser Ile Val Val Ala Gln Val
35 40 45

Val Trp Glu Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly
50 55 60

Gln Met Gln Cys Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln
65 70 75

Asp Leu Gln Ala Ala Arg Ala Leu Cys Val Ile Ala Leu Leu Val
80 85 90

Ala Leu Phe Gly Leu Leu Val Tyr Leu Ala Gly Ala Lys Cys Thr
95 100 105

Thr Cys Val Glu Glu Lys Asp Ser Lys Ala Arg Leu Val Leu Thr
110 115 120

Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu Thr Leu Ile Pro
125 130 135

Val Cys Trp Thr Ala His Ala Ile Ile Arg Asp Phe Tyr Asn Pro
140 145 150

Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser Leu Tyr
155 160 165

Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly Leu
170 175 180

Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His
185 190 195

Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly
200 205 210

Pro Ser Glu Tyr Pro Thr Lys Asn Tyr Val
215 220

<210> 331

<211> 1160

<212> DNA

<213> Homo sapiens

<400> 331

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gtaaaggcaa tggcatttta tcccttgcaa attgctgggc tggttcttgg 150
gttccttggc atggtgggga ctcttgccac aacccttctg cctcagtggg 200
ggagtatcag cttttgttgg cagcaacatt attgtctttg agaggctctg 250
ggaagggctc tggatgaatt gcatccgaca agccagggtc cggttgcaat 300
gcaagttcta tagctccttg ttggctctcc cgcctgccct ggaaacagcc 350
cgggccctca tgtgtgtggc tgttgccttc tccttgatcg ccttgcttat 400
tggcatctgt ggcatgaagc aggtccagtg cacaggctct aacgagaggg 450
ccaaagcata ccttctggga acttcaggag tcctcttcat cctgacgggt 500
atcttcgttc tgattccggt gagctggaca gccaatataa tcatcagaga 550
tttctacaac ccagccatcc acataggtca gaaacgagag ctgggagcag 600
cacttttctt tggctgggca agcgtgctg tcctcttcat tggagggggg 650
ctgctttgtg gattttgtct ctgcaacaga aagaagcaag ggtacagata 700
tccagtgcct ggctaccgtg tgccacacac agataagcga agaaatacga 750
caatgcttag taagacctcc accagttatg tctaagcct ccttttggct 800
ccaagtatgg actatggtca atgtttttta taaagtcctg ctagaaactg 850
taagtatgtg aggcaggaga acttgcttta tgtctagatt tacattgata 900
cgaaagtttc aatttggtac tgggtgtagg aatgaaaatg acttacttgg 950
acattctgac ttcagggtga ttaaagtcac tgactattgt tggacccaat 1000
cgctgctcca attttcata tctaaattca agtataccca taatcattag 1050
caagtgtaca atgatggact acttattact ttttgaccat catgtattat 1100
ctgataagaa tctaaagttg aaattgatat tctataacaa taaaacatat 1150
acctattcta 1160

<210> 332

<211> 173

<212> PRT

<213> Homo sapiens

<400> 332

Met Asn Cys Ile Arg Gln Ala Arg Val Arg Leu Gln Cys Lys Phe

| | | | |
|-----------------|---------------------|---------------------|-----|
| 1 | 5 | 10 | 15 |
| Tyr Ser Ser Leu | Leu Ala Leu Pro Pro | Ala Leu Glu Thr Ala | Arg |
| | 20 | 25 | 30 |
| Ala Leu Met Cys | Val Ala Val Ala Leu | Ser Leu Ile Ala Leu | Leu |
| | 35 | 40 | 45 |
| Ile Gly Ile Cys | Gly Met Lys Gln Val | Gln Cys Thr Gly Ser | Asn |
| | 50 | 55 | 60 |
| Glu Arg Ala Lys | Ala Tyr Leu Leu Gly | Thr Ser Gly Val Leu | Phe |
| | 65 | 70 | 75 |
| Ile Leu Thr Gly | Ile Phe Val Leu Ile | Pro Val Ser Trp Thr | Ala |
| | 80 | 85 | 90 |
| Asn Ile Ile Ile | Arg Asp Phe Tyr Asn | Pro Ala Ile His Ile | Gly |
| | 95 | 100 | 105 |
| Gln Lys Arg Glu | Leu Gly Ala Ala Leu | Phe Leu Gly Trp Ala | Ser |
| | 110 | 115 | 120 |
| Ala Ala Val Leu | Phe Ile Gly Gly Gly | Leu Leu Cys Gly Phe | Cys |
| | 125 | 130 | 135 |
| Cys Cys Asn Arg | Lys Lys Gln Gly Tyr | Arg Tyr Pro Val Pro | Gly |
| | 140 | 145 | 150 |
| Tyr Arg Val Pro | His Thr Asp Lys Arg | Arg Asn Thr Thr Met | Leu |
| | 155 | 160 | 165 |
| Ser Lys Thr Ser | Thr Ser Tyr Val | | |
| | 170 | | |

<210> 333
 <211> 535
 <212> DNA
 <213> Homo sapiens

<400> 333
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 ctcagaagct gctagtctgt ctccaaaaaa agtggactgc agcatttaca 150
 agaagtatcc agtggtggcc atcccctgcc ccatcacata cctaccagtt 200
 tgtggttctg actacatcac ctatgggaat gaatgtcact tgtgtaccga 250
 gagcttgaaa agtaatggaa gagttcagtt tcttcacgat ggaagttgct 300
 aaattctcca tggacataga gagaaaggaa tgatattctc atcatcatct 350
 tcatcatccc aggctctgac tgagtttctt tcagttttac tgatgttctg 400
 ggtgggggac agagccagat tcagagtaat cttgactgaa tggagaaagt 450

ttctgtgcta cccctacaaa cccatgcctc actgacagac cagcattttt 500

ttttaacac gtcaataaaa aaataatctc ccaga 535

<210> 334

<211> 85

<212> PRT

<213> Homo sapiens

<400> 334

Met Lys Ile Thr Gly Gly Leu Leu Leu Cys Thr Val Val Tyr
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Phe Cys Ser Ser Ser Glu Ala Ala Ser Leu Ser Pro Lys Lys Val
20 25 30

Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
35 40 45

Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
50 55 60

Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
65 70 75

Arg Val Gln Phe Leu His Asp Gly Ser Cys
80 85

<210> 335

<211> 742

<212> DNA

<213> Homo sapiens

<400> 335

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ggcataagtg gaaataaact caagctgatg cttcaaaaac gagaagcacc 200

tgttccaact aagactaaag tggccgttga tgagaataaa gccaaagaat 250

tccttggcag cctgaagcgc cagaagcggc agctgtggga ccggactcgg 300

cccgaggtgc agcagtggta ccagcagttt ctctacatgg gctttgatga 350

agcgaaatth gaagatgaca tcacctattg gcttaacaga gatcgaaatg 400

gacatgaata ctatggcgat tactaccaac gtcactatga tgaagactct 450

gcaattggtc cccggagccc ctacggcttt aggcattggag ccagcgtcaa 500

ctacgatgac tactaaccat gacttgccac acgctgtaca agaagcaaat 550

agcgattctc ttcattgtatc tcctaattgcc ttacactact tggttttctga 600

tttgctctat ttcagcagat cttttctacc tactttgtgt gatcaaaaaa 650
gaagagttaa aacaacacat gtaaatgcct tttgatattt catgggaatg 700
cctctcatitt aaaaatagaa ataaagcatt ttgttaaaaa ga 742

<210> 336
<211> 148
<212> PRT
<213> Homo sapiens

<400> 336
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20 25 30
Gly Asn Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val
35 40 45
Pro Thr Lys Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu
50 55 60
Phe Leu Gly Ser Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg
65 70 75
Thr Arg Pro Glu Val Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met
80 85 90
Gly Phe Asp Glu Ala Lys Phe Glu Asp Asp Ile Thr Tyr Trp Leu
95 100 105
Asn Arg Asp Arg Asn Gly His Glu Tyr Tyr Gly Asp Tyr Tyr Gln
110 115 120
Arg His Tyr Asp Glu Asp Ser Ala Ile Gly Pro Arg Ser Pro Tyr
125 130 135
Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr
140 145

<210> 337
<211> 1310
<212> DNA
<213> Homo sapiens

<400> 337
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ttctggtgct ggcocttgcc tgggtctcaa cgcacaccgc tgagggcggg 200
gacccactgc ccagccgctc agggacccca acgcatccc agcccagcgc 250

agccatggca gctacogaca gcatgagagg ggaggcccca ggggcagaga 300
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<210> 338
 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 338
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 20 25 30
 Thr His Thr Ala Glu Gly Gly Asp Pro Leu Pro Gln Pro Ser Gly
 35 40 45

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Thr | Pro | Ser | Gln | Pro | Ser | Ala | Ala | Met | Ala | Ala | Thr | Asp | 50 | 55 | 60 |
| Ser | Met | Arg | Gly | Glu | Ala | Pro | Gly | Ala | Glu | Thr | Pro | Ser | Leu | Arg | 65 | 70 | 75 |
| His | Arg | Gly | Gln | Ala | Ala | Gln | Pro | Glu | Pro | Ser | Thr | Gly | Phe | Thr | 80 | 85 | 90 |
| Ala | Thr | Pro | Pro | Ala | Pro | Asp | Ser | Pro | Gln | Glu | Pro | Leu | Val | Leu | 95 | 100 | 105 |
| Arg | Leu | Lys | Phe | Leu | Asn | Asp | Ser | Glu | Gln | Val | Ala | Arg | Ala | Trp | 110 | 115 | 120 |
| Pro | His | Asp | Thr | Ile | Gly | Ser | Leu | Lys | Arg | Thr | Gln | Phe | Pro | Gly | 125 | 130 | 135 |
| Arg | Glu | Gln | Gln | Val | Arg | Leu | Ile | Tyr | Gln | Gly | Gln | Leu | Leu | Gly | 140 | 145 | 150 |
| Asp | Asp | Thr | Gln | Thr | Leu | Gly | Ser | Leu | His | Leu | Pro | Pro | Asn | Cys | 155 | 160 | 165 |
| Val | Leu | His | Cys | His | Val | Ser | Thr | Arg | Val | Gly | Pro | Pro | Asn | Pro | 170 | 175 | 180 |
| Pro | Cys | Pro | Pro | Gly | Ser | Glu | Pro | Gly | Pro | Ser | Gly | Leu | Glu | Ile | 185 | 190 | 195 |
| Gly | Ser | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | 200 | 205 | 210 |
| Trp | Tyr | Cys | Gln | Ile | Gln | Tyr | Arg | Pro | Phe | Phe | Pro | Leu | Thr | Ala | 215 | 220 | 225 |
| Thr | Leu | Gly | Leu | Ala | Gly | Phe | Thr | Leu | Leu | Leu | Ser | Leu | Leu | Ala | 230 | 235 | 240 |
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<210> 339

<211> 849

<212> DNA

<213> Homo sapiens

<400> 339

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 <211> 148
 <212> PRT
 <213> Homo sapiens

<400> 340
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 35 40 45
 Asp Trp Leu Cys Leu Ala Phe Val Glu Ser Lys Phe Asn Ile Ser
 50 55 60
 Lys Ile Asn Glu Asn Ala Asp Gly Ser Phe Asp Tyr Gly Leu Phe
 65 70 75
 Gln Ile Asn Ser His Tyr Trp Cys Asn Asp Tyr Lys Ser Tyr Ser
 80 85 90
 Glu Asn Leu Cys His Val Asp Cys Gln Asp Leu Leu Asn Pro Asn
 95 100 105
 Leu Leu Ala Gly Ile His Cys Ala Lys Arg Ile Val Ser Gly Ala
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 125 130 135
 Arg Pro Leu Ser Tyr Trp Leu Thr Gly Cys Arg Leu Arg

<210> 341
<211> 23
<212> DNA
<213> Artificial

<220>
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<222> 1-23
<223> Synthetic construct.

<400> 341
ccctccaagg atgacaaagg cgc 23

<210> 342
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<400> 342
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<210> 343
<211> 24
<212> DNA
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<220>
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<222> 1-24
<223> Synthetic construct.

<400> 343
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<223> Synthetic construct.

<400> 344
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<213> Artificial

<220>
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<222> 1-45
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<210> 346
<211> 2575
<212> DNA
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gtgaatgggc tttcagaagg caattaaaga aatccactca gagaggactt 250
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<210> 347

<211> 639

<212> PRT

<213> Homo sapiens

<400> 347

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| Met | Leu | Leu | Arg | Lys | Arg | Tyr | Arg | His | Arg | Pro | Cys | Arg | Leu | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Gly | Cys | Val | Leu | Met | Met | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Met | Leu | His | Pro | Pro | His | His | Thr | Leu | His | Gln | Thr | Val | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Gln | Ala | Ser | Lys | His | Ser | Pro | Glu | Ala | Arg | Tyr | Arg | Leu | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Gly | Glu | Ser | Gln | Asp | Trp | Val | Leu | Glu | Ala | Glu | Asp | Glu | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Tyr | Ser | Pro | Leu | Glu | Gly | Leu | Pro | Pro | Phe | Ile | Ser | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Glu | Asp | Gln | Leu | Leu | Val | Ala | Val | Ala | Leu | Pro | Gln | Ala | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Asn | Gln | Ser | Gln | Gly | Arg | Arg | Gly | Gly | Ser | Tyr | Arg | Leu | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Gln | Pro | Arg | Arg | Gln | Asp | Lys | Glu | Ala | Pro | Lys | Arg | Asp | Trp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ala | Asp | Glu | Asp | Gly | Glu | Val | Ser | Glu | Glu | Glu | Glu | Leu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Phe | Ser | Leu | Asp | Pro | Arg | Gly | Leu | Gln | Glu | Ala | Leu | Ser | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Ile | Pro | Leu | Gln | Arg | Ala | Leu | Pro | Glu | Val | Arg | His | Pro | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Cys | Leu | Gln | Gln | His | Pro | Gln | Asp | Ser | Leu | Pro | Thr | Ala | Ser | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ile | Leu | Cys | Phe | His | Asp | Glu | Ala | Trp | Ser | Thr | Leu | Leu | Arg | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | His | Ser | Ile | Leu | Asp | Thr | Val | Pro | Arg | Ala | Phe | Leu | Lys | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ile | Ile | Leu | Val | Asp | Asp | Leu | Ser | Gln | Gln | Gly | Gln | Leu | Lys | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Leu | Ser | Glu | Tyr | Val | Ala | Arg | Leu | Glu | Gly | Val | Lys | Leu | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Arg Ser Asn Lys | Arg Leu Gly Ala Ile | Arg Ala Arg Met Leu Gly | 260 | 265 | 270 |
| Ala Thr Arg Ala | Thr Gly Asp Val Leu | Val Phe Met Asp Ala His | 275 | 280 | 285 |
| Cys Glu Cys His | Pro Gly Trp Leu Glu | Pro Leu Leu Ser Arg Ile | 290 | 295 | 300 |
| Ala Gly Asp Arg | Ser Arg Val Val Ser | Pro Val Ile Asp Val Ile | 305 | 310 | 315 |
| Asp Trp Lys Thr | Phe Gln Tyr Tyr Pro | Ser Lys Asp Leu Gln Arg | 320 | 325 | 330 |
| Gly Val Leu Asp | Trp Lys Leu Asp Phe | His Trp Glu Pro Leu Pro | 335 | 340 | 345 |
| Glu His Val Arg | Lys Ala Leu Gln Ser | Pro Ile Ser Pro Ile Arg | 350 | 355 | 360 |
| Ser Pro Val Val | Pro Gly Glu Val Val | Ala Met Asp Arg His Tyr | 365 | 370 | 375 |
| Phe Gln Asn Thr | Gly Ala Tyr Asp Ser | Leu Met Ser Leu Arg Gly | 380 | 385 | 390 |
| Gly Glu Asn Leu | Glu Leu Ser Phe Lys | Ala Trp Leu Cys Gly Gly | 395 | 400 | 405 |
| Ser Val Glu Ile | Leu Pro Cys Ser Arg | Val Gly His Ile Tyr Gln | 410 | 415 | 420 |
| Asn Gln Asp Ser | His Ser Pro Leu Asp | Gln Glu Ala Thr Leu Arg | 425 | 430 | 435 |
| Asn Arg Val Arg | Ile Ala Glu Thr Trp | Leu Gly Ser Phe Lys Glu | 440 | 445 | 450 |
| Thr Phe Tyr Lys | His Ser Pro Glu Ala | Phe Ser Leu Ser Lys Ala | 455 | 460 | 465 |
| Glu Lys Pro Asp | Cys Met Glu Arg Leu | Gln Leu Gln Arg Arg Leu | 470 | 475 | 480 |
| Gly Cys Arg Thr | Phe His Trp Phe Leu | Ala Asn Val Tyr Pro Glu | 485 | 490 | 495 |
| Leu Tyr Pro Ser | Glu Pro Arg Pro Ser | Phe Ser Gly Lys Leu His | 500 | 505 | 510 |
| Asn Thr Gly Leu | Gly Leu Cys Ala Asp | Cys Gln Ala Glu Gly Asp | 515 | 520 | 525 |
| Ile Leu Gly Cys | Pro Met Val Leu Ala | Pro Cys Ser Asp Ser Arg | 530 | 535 | 540 |
| Gln Gln Gln Tyr | Leu Gln His Thr Ser | Arg Lys Glu Ile His Phe | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 545 | | 550 | | 555 |
| Gly Ser Pro Gln | His Leu Cys Phe Ala | Val Arg Gln Glu Gln | Val | | |
| | 560 | | 565 | | 570 |
| Ile Leu Gln Asn | Cys Thr Glu Glu Gly | Leu Ala Ile His Gln | Gln | | |
| | 575 | | 580 | | 585 |
| His Trp Asp Phe | Gln Glu Asn Gly Met | Ile Val His Ile Leu | Ser | | |
| | 590 | | 595 | | 600 |
| Gly Lys Cys Met | Glu Ala Val Val Gln | Glu Asn Asn Lys Asp | Leu | | |
| | 605 | | 610 | | 615 |
| Tyr Leu Arg Pro | Cys Asp Gly Lys Ala | Arg Gln Gln Trp Arg | Phe | | |
| | 620 | | 625 | | 630 |
| Asp Gln Ile Asn | Ala Val Asp Glu Arg | | | | |
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<210> 348

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 348

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<210> 349

<211> 24

<212> DNA

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<222> 1-24

<223> Synthetic construct.

<400> 349

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<210> 350

<211> 45

<212> DNA

<213> Artificial

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<222> 1-45

<223> Synthetic construct.

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<210> 351
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<213> Homo sapiens

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<210> 352

<211> 243

<212> PRT

<213> Homo sapiens

<400> 352

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| Leu | Leu | Leu | Leu | Leu | Leu | Leu | Gln | Leu | Pro | Ala | Pro | Ser | Ser | Ala | 20 | 25 | 30 |
| Ser | Glu | Ile | Pro | Lys | Gly | Lys | Gln | Lys | Ala | Gln | Leu | Arg | Gln | Arg | 35 | 40 | 45 |
| Glu | Val | Val | Asp | Leu | Tyr | Asn | Gly | Met | Cys | Leu | Gln | Gly | Pro | Ala | 50 | 55 | 60 |
| Gly | Val | Pro | Gly | Arg | Asp | Gly | Ser | Pro | Gly | Ala | Asn | Val | Ile | Pro | 65 | 70 | 75 |
| Gly | Thr | Pro | Gly | Ile | Pro | Gly | Arg | Asp | Gly | Phe | Lys | Gly | Glu | Lys | 80 | 85 | 90 |
| Gly | Glu | Cys | Leu | Arg | Glu | Ser | Phe | Glu | Glu | Ser | Trp | Thr | Pro | Asn | 95 | 100 | 105 |
| Tyr | Lys | Gln | Cys | Ser | Trp | Ser | Ser | Leu | Asn | Tyr | Gly | Ile | Asp | Leu | 110 | 115 | 120 |
| Gly | Lys | Ile | Ala | Glu | Cys | Thr | Phe | Thr | Lys | Met | Arg | Ser | Asn | Ser | 125 | 130 | 135 |
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg | 140 | 145 | 150 |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu | 155 | 160 | 165 |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln | 170 | 175 | 180 |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser | 185 | 190 | 195 |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp | 200 | 205 | 210 |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp | 215 | 220 | 225 |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu | 230 | 235 | 240 |

Leu Pro Lys

<210> 353

<211> 480

<212> DNA

<213> Homo sapiens

<400> 353

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tccgggggttc tggcccctgc ggtgctcaca gacgatgttc cacaggagcc 150
 cgtgcccacg ctgtggaacg agccggccga gctgccgtcg ggagaaggcc 200
 ccgtggagag caccagcccc ggccgggagc ccgtggacac cggcccccca 250
 gccccaccg tcgcgccagg acccgaggac agcaccgcgc aggagcggct 300
 ggaccagggc ggcggtcgc tggggcccgc cgctatcgcg gccatcgtga 350
 tcgccgccct gctggccacc tgcgtggtgc tggcgctcgt ggtcgtcgcg 400
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 gcggcgcgac tcggcaaaaa aaaaaaaaaa 480

<210> 354
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 354
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 20 25 30
 Pro Val Pro Thr Leu Trp Asn Glu Pro Ala Glu Leu Pro Ser Gly
 35 40 45
 Glu Gly Pro Val Glu Ser Thr Ser Pro Gly Arg Glu Pro Val Asp
 50 55 60
 Thr Gly Pro Pro Ala Pro Thr Val Ala Pro Gly Pro Glu Asp Ser
 65 70 75
 Thr Ala Gln Glu Arg Leu Asp Gln Gly Gly Gly Ser Leu Gly Pro
 80 85 90
 Gly Ala Ile Ala Ala Ile Val Ile Ala Ala Leu Leu Ala Thr Cys
 95 100 105
 Val Val Leu Ala Leu Val Val Val Ala Leu Arg Lys Phe Ser Ala
 110 115 120
 Ser

<210> 355
 <211> 2134
 <212> DNA
 <213> Homo sapiens

<400> 355
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gtgcctgacg gcggcgctgg ccacagcgctg tctgcactgc cacagcaact 150
 tctccaagaa gttctccttc taccgccacc atgtgaactt caagtcctgg 200
 tgggtgggcg acatccccgt gtcaggggcg ctgctcaccg actggagcga 250
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 agaagctgga ccaagtggcg acagcagtgt accagatgat ggatcagctg 350
 taccagggga agatgtactt ccccggtat ttccccaacg agctgcgaaa 400
 catcttccgg gagcaggtgc acctcatcca gaacgccatc atcgaaaggc 450
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 tggaagtcag ctgtccaggg cctcctgaac tacataaata actggcacia 1000
 gtaagtcccc tcctcaaacc aacacaggca gtgtgtgtat gtgagcacct 1050
 cgtgggtgag tatgtgtggg gcacaggctg gctccctcag ctcccacgtc 1100
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cctgggacac acagagccac cccggccttg tgagtgaccc agagaaggga 1600
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 aacctgacct tggaagatgc tgctgagtgt ctcaagcagc actgacagca 1900
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<210> 356

<211> 157

<212> PRT

<213> Homo sapiens

<400> 356

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Leu | Leu | Cys | Leu | Val | Cys | Leu | Thr | Ala | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Cys | Leu | His | Cys | His | Ser | Asn | Phe | Ser | Lys | Lys | Phe | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Tyr | Arg | His | His | Val | Asn | Phe | Lys | Ser | Trp | Trp | Val | Gly | Asp |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Val | Ser | Gly | Ala | Leu | Leu | Thr | Asp | Trp | Ser | Asp | Asp | Thr |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Glu | Leu | His | Leu | Ala | Ile | Pro | Ala | Lys | Ile | Thr | Arg | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Asp | Gln | Val | Ala | Thr | Ala | Val | Tyr | Gln | Met | Met | Asp | Gln |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Gln | Gly | Lys | Met | Tyr | Phe | Pro | Gly | Tyr | Phe | Pro | Asn | Glu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Asn | Ile | Phe | Arg | Glu | Gln | Val | His | Leu | Ile | Gln | Asn | Ala |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ile | Glu | Arg | His | Leu | Ala | Pro | Gly | Ser | Trp | Gly | Gly | Gly | Gln |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Arg | Glu | Gly | Pro | Ser | Leu | Ala | Pro | Glu | Gly | Ser | Met | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

140

145

150

Ser Pro Arg Gly Asp Leu Pro
155

<210> 357

<211> 1536

<212> DNA

<213> Homo sapiens

<400> 357

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acagatgtcc cagctgccat ggaattcatt gctgccactg aggtggctgt 200
cataggcttc ttccaggatt tagaaatacc agcagtgcc atactccata 250
gcatggtgca aaaattccca ggctgtcat ttgggatcag cactgattct 300
gaggttctga cacactacaa catcactggg aacaccatct gcctctttcg 350
cctggtagac aatgaacaac tgaatttaga ggacgaagac attgaaagca 400
ttgatgccac caaattgagc cgtttcattg agatcaacag cctccacatg 450
gtgacagagt acaaccctgt gactgtgatt gggttattca acagcgtaat 500
tcagattcat ctctctctga taatgaacaa ggcctcccca gagtatgaag 550
agaacatgca cagataccag aaggcagcca agctcttcca ggggaagatt 600
ctctttattc tggtaggacag tggtagaaa gaaaatggga aggtgatatc 650
atttttcaaa ctaaaggagt ctcaactgcc agctttggca atttaccaga 700
ctctagatga cgagtgggat aactgcccc cagcagaagt ttccgtagag 750
catgtgcaaa acttttgtga tggattccta agtggaaaat tgttgaaaga 800
aaatcgtgaa tcagaaggaa agactccaaa ggtggaactc tgacttctcc 850
ttggaactac atatggccaa gtatctactt tatgcaaagt aaaaaggcac 900
aactcaaatc tcagagacac taaacaacag gatcactagg cctgccaacc 950
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tctcttcttc cttcttttaa atttcatatc ctactccct atccaatttc 1100
cttcttatcg tgcattcata ctctgtaagc ccatctgtaa cacacctaga 1150
tcaaggcttt aagagactca ctgtgatgcc tctatgaaag agaggcattc 1200

ctagagaaag attgttccaa ttgttcattt aatatcaagt ttgtatactg 1250
cacatgactt acacacaaca tagttcctgc tcttttaagg ttacctaagg 1300
gttgaaactc taccttcttt cataagcaca tgtccgtctc tgactcagga 1350
tcaaaaacca aaggatggtt ttaaaccact ttgtgaaatt gtctttttgc 1400
cagaagttaa aggctgtctc caagtccctg aactcagcag aaatagacca 1450
tgtgaaaact ccatgcttgg ttagcatctc caactcccta tgtaaataca 1500
caacctgcat aataaataaa aggcaatcat gttata 1536

<210> 358

<211> 273

<212> PRT

<213> Homo sapiens

<400> 358

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Ala | Pro | Ser | Arg | Phe | Met | Phe | Leu | Leu | Phe | Leu | Leu | 1 | 5 | 10 | 15 |
| Thr | Cys | Glu | Leu | Ala | Ala | Glu | Val | Ala | Ala | Glu | Val | Glu | Lys | Ser | 20 | 25 | 30 | |
| Ser | Asp | Gly | Pro | Gly | Ala | Ala | Gln | Glu | Pro | Thr | Trp | Leu | Thr | Asp | 35 | 40 | 45 | |
| Val | Pro | Ala | Ala | Met | Glu | Phe | Ile | Ala | Ala | Thr | Glu | Val | Ala | Val | 50 | 55 | 60 | |
| Ile | Gly | Phe | Phe | Gln | Asp | Leu | Glu | Ile | Pro | Ala | Val | Pro | Ile | Leu | 65 | 70 | 75 | |
| His | Ser | Met | Val | Gln | Lys | Phe | Pro | Gly | Val | Ser | Phe | Gly | Ile | Ser | 80 | 85 | 90 | |
| Thr | Asp | Ser | Glu | Val | Leu | Thr | His | Tyr | Asn | Ile | Thr | Gly | Asn | Thr | 95 | 100 | 105 | |
| Ile | Cys | Leu | Phe | Arg | Leu | Val | Asp | Asn | Glu | Gln | Leu | Asn | Leu | Glu | 110 | 115 | 120 | |
| Asp | Glu | Asp | Ile | Glu | Ser | Ile | Asp | Ala | Thr | Lys | Leu | Ser | Arg | Phe | 125 | 130 | 135 | |
| Ile | Glu | Ile | Asn | Ser | Leu | His | Met | Val | Thr | Glu | Tyr | Asn | Pro | Val | 140 | 145 | 150 | |
| Thr | Val | Ile | Gly | Leu | Phe | Asn | Ser | Val | Ile | Gln | Ile | His | Leu | Leu | 155 | 160 | 165 | |
| Leu | Ile | Met | Asn | Lys | Ala | Ser | Pro | Glu | Tyr | Glu | Glu | Asn | Met | His | 170 | 175 | 180 | |
| Arg | Tyr | Gln | Lys | Ala | Ala | Lys | Leu | Phe | Gln | Gly | Lys | Ile | Leu | Phe | 185 | 190 | 195 | |

Ile Leu Val Asp Ser Gly Met Lys Glu Asn Gly Lys Val Ile Ser
200 205 210

Phe Phe Lys Leu Lys Glu Ser Gln Leu Pro Ala Leu Ala Ile Tyr
215 220 225

Gln Thr Leu Asp Asp Glu Trp Asp Thr Leu Pro Thr Ala Glu Val
230 235 240

Ser Val Glu His Val Gln Asn Phe Cys Asp Gly Phe Leu Ser Gly
245 250 255

Lys Leu Leu Lys Glu Asn Arg Glu Ser Glu Gly Lys Thr Pro Lys
260 265 270

Val Glu Leu

<210> 359

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 359

ccagcagtgcc ccatctcca tagc 24

<210> 360

<211> 20

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-20

<223> Synthetic construct.

<400> 360

tgacgagtgg gatacactgc 20

<210> 361

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 361

gctctacgga aacttctgct gtgg 24

<210> 362

<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 362
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<210> 363
<211> 1777
<212> DNA
<213> Homo sapiens

<400> 363
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cctcagcggg gacccgggct cagggacgcg gcggcggcgg cggcgactgc 150
agtggctgga cgatggcagc gtccgccgga gccggggcgg tgattgcagc 200
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gcaggctcct cggaagtccc cctccgacac tgagggtctt gtaaagagtc 850
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tgcggatatc cgaaagaatt aagagaatac ctagaacata tcctcagcaa 1000

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 attagcaaag gataaatgcc gaaggtcact tcattctgga cacagttgga 1700
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 cgtggagagt aaaaagtatc ggtttta 1777

<210> 364

<211> 269

<212> PRT

<213> Homo sapiens

<400> 364

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ser | Ala | Gly | Ala | Gly | Ala | Val | Ile | Ala | Ala | Pro | Asp |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |
| Ser | Arg | Arg | Trp | Leu | Trp | Ser | Val | Leu | Ala | Ala | Ala | Leu | Gly | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Thr | Ala | Gly | Val | Ser | Ala | Leu | Glu | Val | Tyr | Thr | Pro | Lys | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Phe | Val | Ala | Asn | Gly | Thr | Gln | Gly | Lys | Leu | Thr | Cys | Lys | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Ser | Thr | Ser | Thr | Thr | Gly | Gly | Leu | Thr | Ser | Val | Ser | Trp | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Gln | Pro | Glu | Gly | Ala | Asp | Thr | Thr | Val | Ser | Phe | Phe | His | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Gln | Gly | Gln | Val | Tyr | Leu | Gly | Asn | Tyr | Pro | Pro | Phe | Lys | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Ser | Trp | Ala | Gly | Asp | Leu | Asp | Lys | Lys | Asp | Ala | Ser | Ile | 110 | 115 | 120 |
| Asn | Ile | Glu | Asn | Met | Gln | Phe | Ile | His | Asn | Gly | Thr | Tyr | Ile | Cys | 125 | 130 | 135 |
| Asp | Val | Lys | Asn | Pro | Pro | Asp | Ile | Val | Val | Gln | Pro | Gly | His | Ile | 140 | 145 | 150 |
| Arg | Leu | Tyr | Val | Val | Glu | Lys | Glu | Asn | Leu | Pro | Val | Phe | Pro | Val | 155 | 160 | 165 |
| Trp | Val | Val | Val | Gly | Ile | Val | Thr | Ala | Val | Val | Leu | Gly | Leu | Thr | 170 | 175 | 180 |
| Leu | Leu | Ile | Ser | Met | Ile | Leu | Ala | Val | Leu | Tyr | Arg | Arg | Lys | Asn | 185 | 190 | 195 |
| Ser | Lys | Arg | Asp | Tyr | Thr | Gly | Cys | Ser | Thr | Ser | Glu | Ser | Leu | Ser | 200 | 205 | 210 |
| Pro | Val | Lys | Gln | Ala | Pro | Arg | Lys | Ser | Pro | Ser | Asp | Thr | Glu | Gly | 215 | 220 | 225 |
| Leu | Val | Lys | Ser | Leu | Pro | Ser | Gly | Ser | His | Gln | Gly | Pro | Val | Ile | 230 | 235 | 240 |
| Tyr | Ala | Gln | Leu | Asp | His | Ser | Gly | Gly | His | His | Ser | Asp | Lys | Ile | 245 | 250 | 255 |
| Asn | Lys | Ser | Glu | Ser | Val | Val | Tyr | Ala | Asp | Ile | Arg | Lys | Asn | | 260 | 265 | |

<210> 365
 <211> 1321
 <212> DNA
 <213> Homo sapiens

<400> 365
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 ccacgagcgc gccgggctgc cgctctcgg ccacggctgg gtcggggggcc 150
 tcgggctggg gctggggctg gcgctcggg tgaagctggc aggtgggctg 200
 aggggcgcgg ccccggcgca gtcccccg gcggccgacc ctgaggcgctc 250
 gcctctggcc gagccgccac aggagcagtc cctcgccccg tggctctccgc 300
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 agtggttgga gtttctgtag atggaaaaga agtctgtgca gaaggtttag 450
 gttatgctga tgttgagaac cgtgtaccat gtaaaccaga gacagttatg 500

cgaattgcta gcatcagcaa aagtctcacc atggttgctc ttgccaaatt 550
gtgggaagca gggaaactgg atcttgatat tccagtacaa cattatgttc 600
ccgaattccc agaaaaagaa tatgaagggtg aaaagggttc tgtcacaaca 650
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tgagagaaaa gtttgaaaat tcaattgaat ccctaagatt atttaaaaat 950
gatcctttgt tcttcaaacc tggtagtcag tttttgtatt caacttttgg 1000
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tggaactatat gcagaaaata ttccatgact tggatatgct gacgactgtg 1100
caggaagaaa acgagccagt gatttacaat agagcaaggT aaatgaatac 1150
cttctgctgt gtctagctat atcgcatctt aacactatTT tattaattaa 1200
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<210> 366

<211> 373

<212> PRT

<213> Homo sapiens

<400> 366

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Arg | Leu | Leu | Ser | Ala | Val | Thr | Ala | Arg | Ala | Ala | Ala | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gly | Leu | Ala | Ser | Ser | Cys | Gly | Arg | Arg | Gly | Val | His | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Gly | Leu | Pro | Pro | Leu | Gly | His | Gly | Trp | Val | Gly | Gly | Leu | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Gly | Leu | Gly | Leu | Ala | Leu | Gly | Val | Lys | Leu | Ala | Gly | Gly | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Gly | Ala | Ala | Pro | Ala | Gln | Ser | Pro | Ala | Ala | Pro | Asp | Pro | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Ser | Pro | Leu | Ala | Glu | Pro | Pro | Gln | Glu | Gln | Ser | Leu | Ala | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ser | Pro | Gln | Thr | Pro | Ala | Pro | Pro | Cys | Ser | Arg | Cys | Phe | Ala | 95 | 100 | 105 |
| Arg | Ala | Ile | Glu | Ser | Ser | Arg | Asp | Leu | Leu | His | Arg | Ile | Lys | Asp | 110 | 115 | 120 |
| Glu | Val | Gly | Ala | Pro | Gly | Ile | Val | Val | Gly | Val | Ser | Val | Asp | Gly | 125 | 130 | 135 |
| Lys | Glu | Val | Trp | Ser | Glu | Gly | Leu | Gly | Tyr | Ala | Asp | Val | Glu | Asn | 140 | 145 | 150 |
| Arg | Val | Pro | Cys | Lys | Pro | Glu | Thr | Val | Met | Arg | Ile | Ala | Ser | Ile | 155 | 160 | 165 |
| Ser | Lys | Ser | Leu | Thr | Met | Val | Ala | Leu | Ala | Lys | Leu | Trp | Glu | Ala | 170 | 175 | 180 |
| Gly | Lys | Leu | Asp | Leu | Asp | Ile | Pro | Val | Gln | His | Tyr | Val | Pro | Glu | 185 | 190 | 195 |
| Phe | Pro | Glu | Lys | Glu | Tyr | Glu | Gly | Glu | Lys | Val | Ser | Val | Thr | Thr | 200 | 205 | 210 |
| Arg | Leu | Leu | Ile | Ser | His | Leu | Ser | Gly | Ile | Arg | His | Tyr | Glu | Lys | 215 | 220 | 225 |
| Asp | Ile | Lys | Lys | Val | Lys | Glu | Glu | Lys | Ala | Tyr | Lys | Ala | Leu | Lys | 230 | 235 | 240 |
| Met | Met | Lys | Glu | Asn | Val | Ala | Phe | Glu | Gln | Glu | Lys | Glu | Gly | Lys | 245 | 250 | 255 |
| Ser | Asn | Glu | Lys | Asn | Asp | Phe | Thr | Lys | Phe | Lys | Thr | Glu | Gln | Glu | 260 | 265 | 270 |
| Asn | Glu | Ala | Lys | Cys | Arg | Asn | Ser | Lys | Pro | Gly | Lys | Lys | Lys | Asn | 275 | 280 | 285 |
| Asp | Phe | Glu | Gln | Gly | Glu | Leu | Tyr | Leu | Arg | Glu | Lys | Phe | Glu | Asn | 290 | 295 | 300 |
| Ser | Ile | Glu | Ser | Leu | Arg | Leu | Phe | Lys | Asn | Asp | Pro | Leu | Phe | Phe | 305 | 310 | 315 |
| Lys | Pro | Gly | Ser | Gln | Phe | Leu | Tyr | Ser | Thr | Phe | Gly | Tyr | Thr | Leu | 320 | 325 | 330 |
| Leu | Ala | Ala | Ile | Val | Glu | Arg | Ala | Ser | Gly | Cys | Lys | Tyr | Leu | Asp | 335 | 340 | 345 |
| Tyr | Met | Gln | Lys | Ile | Phe | His | Asp | Leu | Asp | Met | Leu | Thr | Thr | Val | 350 | 355 | 360 |
| Gln | Glu | Glu | Asn | Glu | Pro | Val | Ile | Tyr | Asn | Arg | Ala | Arg | | | 365 | 370 | |

<210> 367

<211> 30
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-30
<223> Synthetic construct.

<400> 367
tggaagagaa gtctggctcag aaggttttagg 30

<210> 368
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 368
catttggctt cattctcctg ctctg 25

<210> 369
<211> 28
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-28
<223> Synthetic construct.

<400> 369
aaaacctcag aacaactcat tttgcacc 28

<210> 370
<211> 41
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-41
<223> Synthetic construct.

<400> 370
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<210> 371
<211> 1150
<212> DNA
<213> Homo sapiens

<400> 371
gtgacactat agaagagcta tgacgtcgca tgcacgcgta cgtaagctcg 50

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ctggggcaac ccggtgctc ctgctcttgc tgatggcggg agcagcgccc 150
agtcgagccc ggggcagcgg ctgccgggcc gggactggtg cgcgaggggc 200
tggggcgga ggtcgagagg gcgaggcctg tggcacggtg gggctgctgc 250
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gcccaccaca gcccaggcc ctgagacggc ggccttcatt gagcgctgg 700
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ttaaaaacat cgacgataca ttgaaatgtg tgaacgtttt gaaaagctac 950
agcttccagc agccaaaagc aactgttgtt ttggcaagac ggtcctgatg 1000
tacaagcttg attgaaattc actgctcact tgatacgtta ttcagaaacc 1050
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<210> 372

<211> 269

<212> PRT

<213> Homo sapiens

<400> 372

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 1             5             10             15
Leu Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys
                20             25             30
Arg Ala Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu
                35             40             45

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Ala | Cys | Gly | Thr | Val | Gly | Leu | Leu | Leu | Glu | His | Ser | Phe | 50 | 55 | 60 |
| Glu | Ile | Asp | Asp | Ser | Ala | Asn | Phe | Arg | Lys | Arg | Gly | Ser | Leu | Leu | 65 | 70 | 75 |
| Trp | Asn | Gln | Gln | Asp | Gly | Thr | Leu | Ser | Leu | Ser | Gln | Arg | Gln | Leu | 80 | 85 | 90 |
| Ser | Glu | Glu | Glu | Arg | Gly | Arg | Leu | Arg | Asp | Val | Ala | Ala | Leu | Asn | 95 | 100 | 105 |
| Gly | Leu | Tyr | Arg | Val | Arg | Ile | Pro | Arg | Arg | Pro | Gly | Ala | Leu | Asp | 110 | 115 | 120 |
| Gly | Leu | Glu | Ala | Gly | Gly | Tyr | Val | Ser | Ser | Phe | Val | Pro | Ala | Cys | 125 | 130 | 135 |
| Ser | Leu | Val | Glu | Ser | His | Leu | Ser | Asp | Gln | Leu | Thr | Leu | His | Val | 140 | 145 | 150 |
| Asp | Val | Ala | Gly | Asn | Val | Val | Gly | Val | Ser | Val | Val | Thr | His | Pro | 155 | 160 | 165 |
| Gly | Gly | Cys | Arg | Gly | His | Glu | Val | Glu | Asp | Val | Asp | Leu | Glu | Leu | 170 | 175 | 180 |
| Phe | Asn | Thr | Ser | Val | Gln | Leu | Gln | Pro | Pro | Thr | Thr | Ala | Pro | Gly | 185 | 190 | 195 |
| Pro | Glu | Thr | Ala | Ala | Phe | Ile | Glu | Arg | Leu | Glu | Met | Glu | Gln | Ala | 200 | 205 | 210 |
| Gln | Lys | Ala | Lys | Asn | Pro | Gln | Glu | Gln | Lys | Ser | Phe | Phe | Ala | Lys | 215 | 220 | 225 |
| Tyr | Trp | Met | Tyr | Ile | Ile | Pro | Val | Val | Leu | Phe | Leu | Met | Met | Ser | 230 | 235 | 240 |
| Gly | Ala | Pro | Asp | Thr | Gly | Gly | Gln | Gly | Gly | Gly | Gly | Gly | Gly | Gly | 245 | 250 | 255 |
| Gly | Gly | Gly | Gly | Ser | Gly | Leu | Cys | Cys | Val | Pro | Pro | Ser | Leu | | 260 | 265 | |

<210> 373
 <211> 1706
 <212> DNA
 <213> Homo sapiens

<400> 373
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 cagcaggtcg tccggggggc caccatgctg gtgactgcct accttgcttt 150
 tgtaggcctc ctggcctcct gcctgggggt ggaactgtca agatgccggg 200

ctaaaccctt tggaagggcc tgcagcaatc cctccttctt tcggtttcaa 250
 ctggacttct atcaggtcta cttcctggcc ctggcagctg attggcttca 300
 ggccccctac ctctataaac tctaccagca ttactacttc ctggaaggctc 350
 aaattgccat cctctatgtc tgtggccttg cctctacagt cctctttggc 400
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 gggaggacat gatgggggtg atggactgga aagaaggctc caaaagttcc 1650

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aaaaaa 1706

<210> 374

<211> 450

<212> PRT

<213> Homo sapiens

<400> 374

Met Leu Val Thr Ala Tyr Leu Ala Phe Val Gly Leu Leu Ala Ser
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Cys Leu Gly Leu Glu Leu Ser Arg Cys Arg Ala Lys Pro Pro Gly
20 25 30

Arg Ala Cys Ser Asn Pro Ser Phe Leu Arg Phe Gln Leu Asp Phe
35 40 45

Tyr Gln Val Tyr Phe Leu Ala Leu Ala Ala Asp Trp Leu Gln Ala
50 55 60

Pro Tyr Leu Tyr Lys Leu Tyr Gln His Tyr Tyr Phe Leu Glu Gly
65 70 75

Gln Ile Ala Ile Leu Tyr Val Cys Gly Leu Ala Ser Thr Val Leu
80 85 90

Phe Gly Leu Val Ala Ser Ser Leu Val Asp Trp Leu Gly Arg Lys
95 100 105

Asn Ser Cys Val Leu Phe Ser Leu Thr Tyr Ser Leu Cys Cys Leu
110 115 120

Thr Lys Leu Ser Gln Asp Tyr Phe Val Leu Leu Val Gly Arg Ala
125 130 135

Leu Gly Gly Leu Ser Thr Ala Leu Leu Phe Ser Ala Phe Glu Ala
140 145 150

Trp Tyr Ile His Glu His Val Glu Arg His Asp Phe Pro Ala Glu
155 160 165

Trp Ile Pro Ala Thr Phe Ala Arg Ala Ala Phe Trp Asn His Val
170 175 180

Leu Ala Val Val Ala Gly Val Ala Ala Glu Ala Val Ala Ser Trp
185 190 195

Ile Gly Leu Gly Pro Val Ala Pro Phe Val Ala Ala Ile Pro Leu
200 205 210

Leu Ala Leu Ala Gly Ala Leu Ala Leu Arg Asn Trp Gly Glu Asn
215 220 225

Tyr Asp Arg Gln Arg Ala Phe Ser Arg Thr Cys Ala Gly Gly Leu
230 235 240

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Leu | Leu | Ser | Asp | Arg | Arg | Val | Leu | Leu | Leu | Gly | Thr | Ile | 245 | 250 | 255 |
| Gln | Ala | Leu | Phe | Glu | Ser | Val | Ile | Phe | Ile | Phe | Val | Phe | Leu | Trp | 260 | 265 | 270 |
| Thr | Pro | Val | Leu | Asp | Pro | His | Gly | Ala | Pro | Leu | Gly | Ile | Ile | Phe | 275 | 280 | 285 |
| Ser | Ser | Phe | Met | Ala | Ala | Ser | Leu | Leu | Gly | Ser | Ser | Leu | Tyr | Arg | 290 | 295 | 300 |
| Ile | Ala | Thr | Ser | Lys | Arg | Tyr | His | Leu | Gln | Pro | Met | His | Leu | Leu | 305 | 310 | 315 |
| Ser | Leu | Ala | Val | Leu | Ile | Val | Val | Phe | Ser | Leu | Phe | Met | Leu | Thr | 320 | 325 | 330 |
| Phe | Ser | Thr | Ser | Pro | Gly | Gln | Glu | Ser | Pro | Val | Glu | Ser | Phe | Ile | 335 | 340 | 345 |
| Ala | Phe | Leu | Leu | Ile | Glu | Leu | Ala | Cys | Gly | Leu | Tyr | Phe | Pro | Ser | 350 | 355 | 360 |
| Met | Ser | Phe | Leu | Arg | Arg | Lys | Val | Ile | Pro | Glu | Thr | Glu | Gln | Ala | 365 | 370 | 375 |
| Gly | Val | Leu | Asn | Trp | Phe | Arg | Val | Pro | Leu | His | Ser | Leu | Ala | Cys | 380 | 385 | 390 |
| Leu | Gly | Leu | Leu | Val | Leu | His | Asp | Ser | Asp | Arg | Lys | Thr | Gly | Thr | 395 | 400 | 405 |
| Arg | Asn | Met | Phe | Ser | Ile | Cys | Ser | Ala | Val | Met | Val | Met | Ala | Leu | 410 | 415 | 420 |
| Leu | Ala | Val | Val | Gly | Leu | Phe | Thr | Val | Val | Arg | His | Asp | Ala | Glu | 425 | 430 | 435 |
| Leu | Arg | Val | Pro | Ser | Pro | Thr | Glu | Glu | Pro | Tyr | Ala | Pro | Glu | Leu | 440 | 445 | 450 |

<210> 375

<211> 1098

<212> DNA

<213> Artificial

<400> 375

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gctccccgcg tgcgtcgcg cccacggctt cgttatccat gattatttgt 150
actttcaagt gctgagtcct ggggacattc gatacatctt cacagccaca 200
cctgccaagg actttggtgg tatctttcac acaaggtatg agcagattca 250

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 gacggctaca tgatccgccg ctctctggaa cagcatgggc tgccatgggc 550
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 tgcaaccgcc ctggaccttc tggtagaaga gtttgtccca cattccagcc 650
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 aatttggaga tagcatctgg ggacaagtgg agccaggtag aggaaaaggg 750
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 gcctgagagc catctgtgac ctgtcacact cacctggctc cagcctcccc 950
 taccaggggt ctctgcacag tgaccttcac agcagttggt ggagtgggtt 1000
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 taaagcttct catcagggtt gcaaaaaaaaa aaaaaaaaa aaaaaaaaa 1098

<210> 376
 <211> 188
 <212> PRT
 <213> Homo sapiens

<400> 376
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 1 5 10 15
 Pro Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu
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 Tyr Phe Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr
 35 40 45
 Ala Thr Pro Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr
 50 55 60
 Glu Gln Ile His Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly
 65 70 75
 Glu Leu Ser Asn Gly Phe Phe Ile Gln Asp Gln Ile Ala Leu Val
 80 85 90

Glu Arg Gly Gly Cys Ser Phe Leu Ser Lys Thr Arg Val Val Gln
 95 100 105
 Glu His Gly Gly Arg Ala Val Ile Ile Ser Asp Asn Ala Val Asp
 110 115 120
 Asn Asp Ser Phe Tyr Val Glu Met Ile Gln Asp Ser Thr Gln Arg
 125 130 135
 Thr Ala Asp Ile Pro Ala Leu Phe Leu Leu Gly Arg Asp Gly Tyr
 140 145 150
 Met Ile Arg Arg Ser Leu Glu Gln His Gly Leu Pro Trp Ala Ile
 155 160 165
 Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro Thr Phe Glu Leu
 170 175 180
 Leu Gln Pro Pro Trp Thr Phe Trp
 185

<210> 377
 <211> 496
 <212> DNA
 <213> Artificial

<220>
 <221> unsure
 <222> 396
 <223> unknown base

<400> 377
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 ggctggtggt gatggctggt gtgattccaa tccagggcgg gatcctgaac 100
 ctgaacaaga tggtaagca agtgactggg aaaatgccca toctctccta 150
 ctggccctac ggctgtcact gcggactagg tggcagaggc caacccaaag 200
 atgccacgga ctggtgctgc cagacctatg actgctgcta tgaccacctg 250
 aagaccacgg ggtgcggcat ctacaaggac aacaacaaaa gcagcatata 300
 ttgtatggat ttatctcaac gctattgttt aatggctgtg tttaatgtga 350
 tctatctgga aaatgaggac tccgaataaa aagctattac tawttnaaaa 400
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 496

<210> 378
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 378

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Ala | Leu | Leu | Cys | Gly | Leu | Val | Val | Met | Ala | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Pro | Ile | Gln | Gly | Gly | Ile | Leu | Asn | Leu | Asn | Lys | Met | Val | Lys |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Gln | Val | Thr | Gly | Lys | Met | Pro | Ile | Leu | Ser | Tyr | Trp | Pro | Tyr | Gly |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Cys | His | Cys | Gly | Leu | Gly | Gly | Arg | Gly | Gln | Pro | Lys | Asp | Ala | Thr |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Asp | Trp | Cys | Cys | Gln | Thr | His | Asp | Cys | Cys | Tyr | Asp | His | Leu | Lys |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Thr | Gln | Gly | Cys | Gly | Ile | Tyr | Lys | Asp | Asn | Asn | Lys | Ser | Ser | Ile |
| | | | 80 | | | | | 85 | | | | | | 90 |
| His | Cys | Met | Asp | Leu | Ser | Gln | Arg | Tyr | Cys | Leu | Met | Ala | Val | Phe |
| | | | 95 | | | | | 100 | | | | | | 105 |
| Asn | Val | Ile | Tyr | Leu | Glu | Asn | Glu | Asp | Ser | Glu | | | | |
| | | | | 110 | | | | 115 | | | | | | |

<210> 379

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 379

ctgcctccac tgctctgtgc tggg 24

<210> 380

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 380

cagagcagtg gatgttcccc tggg 24

<210> 381

<211> 45

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-45

<223> Synthetic construct.

<400> 381

ctgaacaaga tgggtcaagca agtgactggg aaaatgccca tcttc 45

<210> 382

<211> 764

<212> DNA

<213> Homo sapiens

<400> 382

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ggcgatgtgg aggggtgcccg gcacaaccag acgcccagtc acaggcgaga 100
gccctgggat gcaccggcca gaggccatgc tgctgctgct cacgcttgcc 150
ctcctggggg gccccacctg ggcagggaag atgtatggcc ctggaggagg 200
caagtatttc agcaccactg aagactacga ccatgaaatc acagggctgc 250
gggtgtctgt aggtcttctc ctggtgaaaa gtgtccagggt gaaacttgga 300
gactcctggg acgtgaaact gggagcctta ggtgggaata ccaggaagt 350
caccctgcag ccaggcgaat acatcacaaa agtctttgtc gccttccaag 400
ctttcctccg gggtatggtc atgtacacca gcaaggaccg ctatttctat 450
tttggaagc ttgatggcca gatctcctct gcctacccca gccaagaggg 500
gcagggtgctg gtgggcatct atggccagta tcaactcctt ggcatacaaga 550
gcattggctt tgaatggaat tatccactag aggagccgac cactgagcca 600
ccagttaatc tcacatactc agcaaactca cccgtgggtc gctaggggtg 650
ggtatggggc catccagact gaggccatct gtgtgggtgt ggctgatggt 700
actggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa 750
gcttctgcag aaaa 764

<210> 383

<211> 178

<212> PRT

<213> Homo sapiens

<400> 383

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Arg | Pro | Glu | Ala | Met | Leu | Leu | Leu | Thr | Leu | Ala | Leu |
| 1 | | | | 5 | | | 10 | | | | | 15 | |
| Leu | Gly | Gly | Pro | Thr | Trp | Ala | Gly | Lys | Met | Tyr | Gly | Pro | Gly |
| | | | 20 | | | | 25 | | | | | 30 | |
| Gly | Lys | Tyr | Phe | Ser | Thr | Thr | Glu | Asp | Tyr | Asp | His | Glu | Ile |
| | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Leu | Arg | Val | Ser | Val | Gly | Leu | Leu | Leu | Val | Lys | Ser | Val | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Lys | Leu | Gly | Asp | Ser | Trp | Asp | Val | Lys | Leu | Gly | Ala | Leu | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Gly | Asn | Thr | Gln | Glu | Val | Thr | Leu | Gln | Pro | Gly | Glu | Tyr | Ile | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Lys | Val | Phe | Val | Ala | Phe | Gln | Ala | Phe | Leu | Arg | Gly | Met | Val | Met | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Tyr | Thr | Ser | Lys | Asp | Arg | Tyr | Phe | Tyr | Phe | Gly | Lys | Leu | Asp | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gln | Ile | Ser | Ser | Ala | Tyr | Pro | Ser | Gln | Glu | Gly | Gln | Val | Leu | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ile | Tyr | Gly | Gln | Tyr | Gln | Leu | Leu | Gly | Ile | Lys | Ser | Ile | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Glu | Trp | Asn | Tyr | Pro | Leu | Glu | Glu | Pro | Thr | Thr | Glu | Pro | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Asn | Leu | Thr | Tyr | Ser | Ala | Asn | Ser | Pro | Val | Gly | Arg | | | |
| | | | | 170 | | | | | 175 | | | | | | |

<210> 384
 <211> 2379
 <212> DNA
 <213> Homo sapiens

<400> 384
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 atacagatgt ggcagctcag gtagcccaa attgcctgga agaatacatc 150
 atgtttttcg ataagaagaa attgtaggat ccagtttttt ttttaaccgc 200
 cccctcccca cccccaaaa aaactgtaaa gatgcaaaaa cgtaatatcc 250
 atgaagatcc tattacctag gaagattttg atgttttgct gcgaatgcgg 300
 tgttgaggatt tatttgttct tggagtgttc tgcgtggctg gcaaagaata 350
 atgttccaaa atcgggtccat ctccaagggt gtccaatttt tcttcctggg 400
 tgtcagcgag ccctgactca ctacagtga gctgacagg gctgtcatgc 450
 aactggcccc taagccaaag caaaagacct aaggacgacc tttgaacaat 500
 acaaaggatg ggtttcaatg taattaggct actgagcgga tcagctgtag 550
 cactggttat agccccact gtcttactga caatgctttc ttctgccgaa 600
 cgaggatgcc ctaagggtgt taggtgtgaa ggcaaatgg tatattgtga 650

atctcagaaa ttacaggaga taccctcaag tataatctgct ggttgcttag 700
gtttgtccct tcgctataac agccttcaaa aacttaagta taatcaattt 750
aaagggctca accagctcac ctggctatac cttgaccata accatatcag 800
caatattgac gaaaatgctt ttaatggaat acgcagactc aaagagctga 850
ttcttagttc caatagaatc tcctattttc ttaacaatac cttcagacct 900
gtgacaaaatt taagggaactt ggatctgtcc tataatcagc tgcattctct 950
gggatctgaa cagtttcggg gcttgcgga gctgctgagt ttacatttac 1000
ggctaaactc cctgagaacc atccctgtgc gaatattcca agactgccgc 1050
aacctggaac ttttggacct gggatataac cggatccgaa gtttagccag 1100
gaatgtcttt gctggcatga tcagactcaa agaacttcac ctggagcaca 1150
atcaattttc caagctcaac ctggcccttt ttccaagggtt ggtcagcctt 1200
cagaaccttt acttgcatg gaataaaatc agtgtcatag gacagaccat 1250
gtcctggacc tggagctcct taaaaggct tgatttatca ggcaatgaga 1300
tcgaagcttt cagtggacct agtgttttcc agtgtgtccc gaatctgcag 1350
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ggtctaaggg agaatacaat tatctgtgcc agtcccaaag agctgcaagg 1550
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ctacagagag gtttgatctg gccagggtc tcccaaagcc gacgtttaag 1650
cccaagctcc ccaggccgaa gcatgagagc aaacccctt tgccccgac 1700
ggtgggagcc acagagcccg gccagagac cgatgctgac gccgagcaca 1750
tctctttcca taaaatcatc gcgggcagcg tggcgctttt cctgtccgtg 1800
ctcgtcatcc tgctggttat ctacgtgtca tggaagcggg accctgcgag 1850
catgaagcag ctgcagcagc gctccctcat gcgaaggcac aggaaaaaga 1900
aaagacagtc cctaaagcaa atgactccca gcaccagga attttatgta 1950
gattataaac ccaccaacac ggagaccagc gagatgctgc tgaatgggac 2000
gggacctgc acctataaca aatcgggtc caggagagtgt gaggtatgaa 2050
ccattgtgat aaaaagagct cttaaaagct gggaaataag tggtgcttta 2100

ttgaactctg gtgactatca agggaacgcg atgccccccc tccccttccc 2150
 tctccctctc actttggtgg caagatcctt ccttgccgt tttagtgcatt 2200
 tcataatact ggtcattttc ctctcatata taatcaaccc attgaaattt 2250
 aaataaccaca atcaatgtga agcttgaact ccggtttaat ataataccta 2300
 ttgtataaga ccctttactg attccattaa tgcgcattt gttttaagat 2350
 aaaacttctt tcataggtaa aaaaaaaaa 2379

<210> 385
 <211> 513
 <212> PRT
 <213> Homo sapiens

<400> 385
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 1 5 10 15
 Leu Val Ile Ala Pro Thr Val Leu Leu Thr Met Leu Ser Ser Ala
 20 25 30
 Glu Arg Gly Cys Pro Lys Gly Cys Arg Cys Glu Gly Lys Met Val
 35 40 45
 Tyr Cys Glu Ser Gln Lys Leu Gln Glu Ile Pro Ser Ser Ile Ser
 50 55 60
 Ala Gly Cys Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Gln Lys
 65 70 75
 Leu Lys Tyr Asn Gln Phe Lys Gly Leu Asn Gln Leu Thr Trp Leu
 80 85 90
 Tyr Leu Asp His Asn His Ile Ser Asn Ile Asp Glu Asn Ala Phe
 95 100 105
 Asn Gly Ile Arg Arg Leu Lys Glu Leu Ile Leu Ser Ser Asn Arg
 110 115 120
 Ile Ser Tyr Phe Leu Asn Asn Thr Phe Arg Pro Val Thr Asn Leu
 125 130 135
 Arg Asn Leu Asp Leu Ser Tyr Asn Gln Leu His Ser Leu Gly Ser
 140 145 150
 Glu Gln Phe Arg Gly Leu Arg Lys Leu Leu Ser Leu His Leu Arg
 155 160 165
 Ser Asn Ser Leu Arg Thr Ile Pro Val Arg Ile Phe Gln Asp Cys
 170 175 180
 Arg Asn Leu Glu Leu Leu Asp Leu Gly Tyr Asn Arg Ile Arg Ser
 185 190 195
 Leu Ala Arg Asn Val Phe Ala Gly Met Ile Arg Leu Lys Glu Leu

| 200 | | | | | 205 | | | | | 210 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Glu | His | Asn | Gln | Phe | Ser | Lys | Leu | Asn | Leu | Ala | Leu | Phe |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Arg | Leu | Val | Ser | Leu | Gln | Asn | Leu | Tyr | Leu | Gln | Trp | Asn | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Ser | Val | Ile | Gly | Gln | Thr | Met | Ser | Trp | Thr | Trp | Ser | Ser | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Arg | Leu | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Ala | Phe | Ser | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Pro | Ser | Val | Phe | Gln | Cys | Val | Pro | Asn | Leu | Gln | Arg | Leu | Asn | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Asp | Ser | Asn | Lys | Leu | Thr | Phe | Ile | Gly | Gln | Glu | Ile | Leu | Asp | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Trp | Ile | Ser | Leu | Asn | Asp | Ile | Ser | Leu | Ala | Gly | Asn | Ile | Trp | Glu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Cys | Ser | Arg | Asn | Ile | Cys | Ser | Leu | Val | Asn | Trp | Leu | Lys | Ser | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Lys | Gly | Leu | Arg | Glu | Asn | Thr | Ile | Ile | Cys | Ala | Ser | Pro | Lys | Glu |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Leu | Gln | Gly | Val | Asn | Val | Ile | Asp | Ala | Val | Lys | Asn | Tyr | Ser | Ile |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Cys | Gly | Lys | Ser | Thr | Thr | Glu | Arg | Phe | Asp | Leu | Ala | Arg | Ala | Leu |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Pro | Lys | Pro | Thr | Phe | Lys | Pro | Lys | Leu | Pro | Arg | Pro | Lys | His | Glu |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ser | Lys | Pro | Pro | Leu | Pro | Pro | Thr | Val | Gly | Ala | Thr | Glu | Pro | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Pro | Glu | Thr | Asp | Ala | Asp | Ala | Glu | His | Ile | Ser | Phe | His | Lys | Ile |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ile | Ala | Gly | Ser | Val | Ala | Leu | Phe | Leu | Ser | Val | Leu | Val | Ile | Leu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Val | Ile | Tyr | Val | Ser | Trp | Lys | Arg | Tyr | Pro | Ala | Ser | Met | Lys |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Gln | Leu | Gln | Gln | Arg | Ser | Leu | Met | Arg | Arg | His | Arg | Lys | Lys | Lys |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Arg | Gln | Ser | Leu | Lys | Gln | Met | Thr | Pro | Ser | Thr | Gln | Glu | Phe | Tyr |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Val | Asp | Tyr | Lys | Pro | Thr | Asn | Thr | Glu | Thr | Ser | Glu | Met | Leu | Leu |
| | | | | 485 | | | | | 490 | | | | | 495 |

Asn Gly Thr Gly Pro Cys Thr Tyr Asn Lys Ser Gly Ser Arg Glu
500 505 510

Cys Glu Val

<210> 386
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 386
ctgggatctg aacagtttcg gggc 24

<210> 387
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 387
ggtccccagg acatggtctg tccc 24

<210> 388
<211> 48
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-48
<223> Synthetic construct.

<400> 388
gctgagttta catttacggt ctaactccct gagaaccatc cctgtgcg 48

<210> 389
<211> 1449
<212> DNA
<213> Homo sapiens

<400> 389
agttctgaga aagaaggaaa taaacacagg caccaaacca ctatcctaag 50
ttgactgtcc tttaaatatg tcaagatcca gacttttcag tgtcacctca 100
gcgatctcaa cgatagggat cttgtgtttg ccgctattcc agttggtgct 150
ctcggaccta ccatgcgaag aagatgaaat gtgtgtaaat tataatgacc 200

aacaccctaa tggctggtat atctggatcc tcctgctgct ggttttgggtg 250
 gcagctcttc tctgtggagc tgtggtcctc tgccctccagt gctggctgag 300
 gagaccccgga attgattctc acaggcgcac catggcagtt tttgctgttg 350
 gagacttggga ctctatttat gggacagaag cagctgtgag tccaactgtt 400
 ggaattcacc ttcaaactca aaccctgac ctatatcctg ttcctgctcc 450
 atgttttggc ccttttaggt cccacctcc atatgaagaa attgtaaaaa 500
 caacctgatt ttaggtgtgg attatcaatt taaagtatta acgacatctg 550
 taattccaaa acatcaaatt taggaatagt tatttcagtt gttggaaatg 600
 tccagagatc tattcatata gtctgaggaa ggacaattcg acaaaagaat 650
 ggatgttggga aaaaattttg gtcattggaga tgtttaaata gtaaagtagc 700
 aggcttttga tgtgtcactg ctgtatcata cttttatgct acacaaccaa 750
 attaattgctt ctccactagt atccaaacag gcaacaatta ggtgctggaa 800
 gtagtttcca tcacatttag gactccactg cagtatacag cacaccattt 850
 tctgctttta actctttcct agcatggggg ccataaaaaat tattataatt 900
 taacaatagc ccaagccgag aatccaacat gtccagaacc agaaccagaa 950
 agatagtatt tgaatgaagg tgaggggaga gagtaggaaa aagaaaagtt 1000
 tggagttgaa gggtaaagga taaatgaaga ggaaaaggaa aagattacaa 1050
 gtctcagcaa aaacaagagg ttttatgcc caacctgaag aggaagaaat 1100
 tgtagataga aggtgaagga gattgctgaa gatatagagc acatataatg 1150
 ccaacacggg gagaaaagaa aatttcccct ttacagtaa tgaatgtggc 1200
 ctccatagtc catagtgttt ctctggagcc tcagggettg gcatttattg 1250
 cagcatcatg ctaagaacct tcggcatagg tatctgttcc catgaggact 1300
 gcagaagtag caatgagaca tcttcaagtg gcattttggc agtggccatc 1350
 agcaggggga cagacaaaaa catccatcac agatgacata tgatcttcag 1400
 ctgacaaatt tgttgaacaa aacaataaac atcaatagat atctaaaaa 1449

<210> 390

<211> 146

<212> PRT

<213> Homo sapiens

<400> 390

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Arg | Ser | Arg | Leu | Phe | Ser | Val | Thr | Ser | Ala | Ile | Ser | Thr |
| 1 | | | | | 5 | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Ile | Leu | Cys | Leu | Pro | Leu | Phe | Gln | Leu | Val | Leu | Ser | Asp | 20 | 25 | 30 |
| Leu | Pro | Cys | Glu | Glu | Asp | Glu | Met | Cys | Val | Asn | Tyr | Asn | Asp | Gln | 35 | 40 | 45 |
| His | Pro | Asn | Gly | Trp | Tyr | Ile | Trp | Ile | Leu | Leu | Leu | Leu | Val | Leu | 50 | 55 | 60 |
| Val | Ala | Ala | Leu | Leu | Cys | Gly | Ala | Val | Val | Leu | Cys | Leu | Gln | Cys | 65 | 70 | 75 |
| Trp | Leu | Arg | Arg | Pro | Arg | Ile | Asp | Ser | His | Arg | Arg | Thr | Met | Ala | 80 | 85 | 90 |
| Val | Phe | Ala | Val | Gly | Asp | Leu | Asp | Ser | Ile | Tyr | Gly | Thr | Glu | Ala | 95 | 100 | 105 |
| Ala | Val | Ser | Pro | Thr | Val | Gly | Ile | His | Leu | Gln | Thr | Gln | Thr | Pro | 110 | 115 | 120 |
| Asp | Leu | Tyr | Pro | Val | Pro | Ala | Pro | Cys | Phe | Gly | Pro | Leu | Gly | Ser | 125 | 130 | 135 |
| Pro | Pro | Pro | Tyr | Glu | Glu | Ile | Val | Lys | Thr | Thr | | | | | 140 | 145 | |

<210> 391
 <211> 26
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

 <400> 391
 cttttcagtg tcacctcagc gatctc 26

 <210> 392
 <211> 23
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

 <400> 392
 ccaaaacatg gagcaggaac agg 23

 <210> 393
 <211> 47
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 393
ccagttggtg ctctcggacc taccatgcga agaagatgaa atgtgtg 47

<210> 394
<211> 2340
<212> DNA
<213> Homo sapiens

<400> 394
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acccaccggc gtttctccag ctcgatctgg aggctgcttc gccagtgtgg 100
gacgcagctg acgcccgtt attagctctc gctgcgtcgc cccggctcag 150
aagctccgtg gcggcggcga ccgtgacgag aagcccacgg ccagctcagt 200
tctctttctac tttgggagag agagaaagtc agatgccctt tttaaactcc 250
ctcttcaaaa ctcatctcct ggggtgactga gttaatagag tggatacaac 300
cttgctgaag atgaagaata tacaatattg aggatatttt tttctttttt 350
ttttcaagtc ttgatttgtg gcttacctca agttaccatt tttcagtcaa 400
gtctgtttgt ttgcttcttc agaaatgttt tttaaatct caagaaaaaa 450
tatgtcccag aaattgagtt tactgttgct tgtatttggga ctcatgtggg 500
gattgatgtt actgcaactat acttttcaac aaccaagaca tcaaagcagt 550
gtcaagttac gtgagcaaat actagactta agcaaaagat atgttaaagc 600
tctagcagag gaaaataaga acacagtgga tgtcgagaac ggtgcttcta 650
tgccaggata tgcggatctg aaaagaacaa ttgctgtcct tctggatgac 700
atthtgcac gattggtgaa gctggagaac aaagttgact atattgttgt 750
gaatggctca gcagccaaca ccaccaatgg tactagtggg aatttgggtc 800
cagtaaccac aaataaaaga acgaatgtct cgggcagtat cagatagcag 850
ttgaaaatca ccttgtgctg ctccatccac tgtggattat atcctatggc 900
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<210> 395

<211> 140

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Thr | Ile | Ser | Arg | Lys | Asn | Met | Ser | Gln | Lys | Leu | Ser |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Leu Leu Leu Leu Val Phe Gly Leu Ile Trp Gly Leu Met Leu Leu
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 His Tyr Thr Phe Gln Gln Pro Arg His Gln Ser Ser Val Lys Leu
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 50 55 60
 Ala Glu Glu Asn Lys Asn Thr Val Asp Val Glu Asn Gly Ala Ser
 65 70 75
 Met Ala Gly Tyr Ala Asp Leu Lys Arg Thr Ile Ala Val Leu Leu
 80 85 90
 Asp Asp Ile Leu Gln Arg Leu Val Lys Leu Glu Asn Lys Val Asp
 95 100 105
 Tyr Ile Val Val Asn Gly Ser Ala Ala Asn Thr Thr Asn Gly Thr
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 Ser Gly Asn Leu Val Pro Val Thr Thr Asn Lys Arg Thr Asn Val
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 Ser Gly Ser Ile Arg
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<210> 397

<211> 353

<212> PRT

<213> Homo sapiens

<400> 397

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Trp | Pro | Leu | Leu | Leu | Leu | Leu | Ala | Val | Ser | Gly | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Thr | Thr | Arg | Pro | Cys | Phe | Pro | Gly | Cys | Gln | Cys | Glu | Val | Glu | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Gly | Leu | Phe | Asp | Ser | Phe | Ser | Leu | Thr | Arg | Val | Asp | Cys | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Leu | Gly | Pro | His | Ile | Met | Pro | Val | Pro | Ile | Pro | Leu | Asp | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | His | Leu | Asp | Leu | Ser | Ser | Asn | Arg | Leu | Glu | Met | Val | Asn | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Val | Leu | Ala | Gly | Pro | Gly | Tyr | Thr | Thr | Leu | Ala | Gly | Leu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Ser | His | Asn | Leu | Leu | Thr | Ser | Ile | Ser | Pro | Thr | Ala | Phe | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Leu | Arg | Tyr | Leu | Glu | Ser | Leu | Asp | Leu | Ser | His | Asn | Gly | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ala | Leu | Pro | Ala | Glu | Ser | Phe | Thr | Ser | Ser | Pro | Leu | Ser | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Asn | Leu | Ser | His | Asn | Gln | Leu | Arg | Glu | Val | Ser | Val | Ser | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Thr | Thr | His | Ser | Gln | Gly | Arg | Ala | Leu | His | Val | Asp | Leu | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Asn | Leu | Ile | His | Arg | Leu | Val | Pro | His | Pro | Thr | Arg | Ala | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Pro | Ala | Pro | Thr | Ile | Gln | Ser | Leu | Asn | Leu | Ala | Trp | Asn | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | His | Ala | Val | Pro | Asn | Leu | Arg | Asp | Leu | Pro | Leu | Arg | Tyr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Leu | Asp | Gly | Asn | Pro | Leu | Ala | Val | Ile | Gly | Pro | Gly | Ala | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Gly | Leu | Gly | Gly | Leu | Thr | His | Leu | Ser | Leu | Ala | Ser | Leu | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Leu | Pro | Glu | Leu | Ala | Pro | Ser | Gly | Phe | Arg | Glu | Leu | Pro | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Gln | Val | Leu | Asp | Leu | Ser | Gly | Asn | Pro | Lys | Leu | Asn | Trp | Ala | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Ala | Glu | Val | Phe | Ser | Gly | Leu | Ser | Ser | Leu | Gln | Glu | Leu | Asp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Leu | Ser | Gly | Thr | Asn | Leu | Val | Pro | Leu | Pro | Glu | Ala | Leu | Leu | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Leu | Pro | Ala | Leu | Gln | Ser | Val | Ser | Val | Gly | Gln | Asp | Val | Arg | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Cys | Arg | Arg | Leu | Val | Arg | Glu | Gly | Thr | Tyr | Pro | Arg | Arg | Pro | Gly | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ser | Ser | Pro | Lys | Val | Pro | Leu | His | Cys | Val | Asp | Thr | Arg | Glu | Ser | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ala | Ala | Arg | Gly | Pro | Thr | Ile | Leu | | | | | | | | |
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<210> 398

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 398

ccctgccagc cgagagcttc acc 23

<210> 399

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 399

ggttggtgcc cgaaaggtcc agc 23

<210> 400

<211> 44

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-44

<223> Synthetic construct.

<400> 400

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<210> 401

<211> 1571

<212> DNA

<213> Homo sapiens

<400> 401

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atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac 200

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cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc 300

ttctcttcac gggaggcttg gcagtttttc ttactcctgt ggtctccaga 350

tttcaggcct aagatgaaag cctctagtct tgcccttcagc cttctctctg 400

ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat 450

ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt 500

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gaatcttaag gaggactgag tctttgcaag acacaaagcc tgcgaatcga 600

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ccaattcctt tcttaccatc aagaaggacc tccggctctc tcatgccac 750

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<210> 402

<211> 261

<212> PRT

<213> Homo sapiens

<400> 402

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gln | Phe | Pro | Lys | Thr | Ser | Phe | Asp | Ile | Ser | Pro | Glu | Met |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Phe | Ser | Ile | Tyr | Ser | Leu | Gln | Val | Pro | Ala | Val | Pro | Gly | Leu |
| | | | | 20 | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Trp | Ala | Leu | Thr | Ala | Glu | Pro | Gly | Trp | Gly | Gln | Asn | Lys |
| | | | | 35 | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Thr | Thr | Cys | Ala | Thr | Asn | Ser | His | Ser | Asp | Ser | Glu | Leu |
| | | | | 50 | | | | | 55 | | | | 60 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Pro | Glu | Ile | Phe | Ser | Ser | Arg | Glu | Ala | Trp | Gln | Phe | Phe | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Trp | Ser | Pro | Asp | Phe | Arg | Pro | Lys | Met | Lys | Ala | Ser | Ser |
| | | | | 80 | | | | | 85 | | | | 90 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Phe | Ser | Leu | Leu | Ser | Ala | Ala | Phe | Tyr | Leu | Leu | Trp | Thr | 95 | 100 | 105 |
| Pro | Ser | Thr | Gly | Leu | Lys | Thr | Leu | Asn | Leu | Gly | Ser | Cys | Val | Ile | 110 | 115 | 120 |
| Ala | Thr | Asn | Leu | Gln | Glu | Ile | Arg | Asn | Gly | Phe | Ser | Glu | Ile | Arg | 125 | 130 | 135 |
| Gly | Ser | Val | Gln | Ala | Lys | Asp | Gly | Asn | Ile | Asp | Ile | Arg | Ile | Leu | 140 | 145 | 150 |
| Arg | Arg | Thr | Glu | Ser | Leu | Gln | Asp | Thr | Lys | Pro | Ala | Asn | Arg | Cys | 155 | 160 | 165 |
| Cys | Leu | Leu | Arg | His | Leu | Leu | Arg | Leu | Tyr | Leu | Asp | Arg | Val | Phe | 170 | 175 | 180 |
| Lys | Asn | Tyr | Gln | Thr | Pro | Asp | His | Tyr | Thr | Leu | Arg | Lys | Ile | Ser | 185 | 190 | 195 |
| Ser | Leu | Ala | Asn | Ser | Phe | Leu | Thr | Ile | Lys | Lys | Asp | Leu | Arg | Leu | 200 | 205 | 210 |
| Ser | His | Ala | His | Met | Thr | Cys | His | Cys | Gly | Glu | Glu | Ala | Met | Lys | 215 | 220 | 225 |
| Lys | Tyr | Ser | Gln | Ile | Leu | Ser | His | Phe | Glu | Lys | Leu | Glu | Pro | Gln | 230 | 235 | 240 |
| Ala | Ala | Val | Val | Lys | Ala | Leu | Gly | Glu | Leu | Asp | Ile | Leu | Leu | Gln | 245 | 250 | 255 |
| Trp | Met | Glu | Glu | Thr | Glu | | | | | | | | | | 260 | | |

<210> 403

<211> 28

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-28

<223> Synthetic construct.

<400> 403

ctcctgtggt ctccagattt caggccta 28

<210> 404

<211> 26

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-26

<223> Synthetic construct.

<400> 404
agtcctcctt aagattctga tgtcaa 26

<210> 405
<211> 998
<212> DNA
<213> Homo sapiens

<400> 405
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tcacaaaaac tcgactccaa atgcaaggag aagcagctct tgctcggttg 200
ggagacggtg caagagaatc tgccccctat aggggaatgg tgcgcacagc 250
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ggacaatatc atgactcacg gtttatcaag tttatgttct ggactggtag 750
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caaccacgag ataaacaagg aaggggactt ttgtataaat catcgactga 850
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cttacttatg aaaaaatcag agagatgagt ggagtcagtc cattttta 998

<210> 406
<211> 323
<212> PRT
<213> Homo sapiens

<400> 406
Met Ser Val Pro Glu Glu Glu Glu Arg Leu Leu Pro Leu Thr Gln
1 5 10 15

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Arg | Trp | Pro | Arg | Ala | Ser | Lys | Phe | Leu | Leu | Ser | Gly | Cys | Ala | Ala | | 20 | 25 | 30 |
| Thr | Val | Ala | Glu | Leu | Ala | Thr | Phe | Pro | Leu | Asp | Leu | Thr | Lys | Thr | | 35 | 40 | 45 |
| Arg | Leu | Gln | Met | Gln | Gly | Glu | Ala | Ala | Leu | Ala | Arg | Leu | Gly | Asp | | 50 | 55 | 60 |
| Gly | Ala | Arg | Glu | Ser | Ala | Pro | Tyr | Arg | Gly | Met | Val | Arg | Thr | Ala | | 65 | 70 | 75 |
| Leu | Gly | Ile | Ile | Glu | Glu | Glu | Gly | Phe | Leu | Lys | Leu | Trp | Gln | Gly | | 80 | 85 | 90 |
| Val | Thr | Pro | Ala | Ile | Tyr | Arg | His | Val | Val | Tyr | Ser | Gly | Gly | Arg | | 95 | 100 | 105 |
| Met | Val | Thr | Tyr | Glu | His | Leu | Arg | Glu | Val | Val | Phe | Gly | Lys | Ser | | 110 | 115 | 120 |
| Glu | Asp | Glu | His | Tyr | Pro | Leu | Trp | Lys | Ser | Val | Ile | Gly | Gly | Met | | 125 | 130 | 135 |
| Met | Ala | Gly | Val | Ile | Gly | Gln | Phe | Leu | Ala | Asn | Pro | Thr | Asp | Leu | | 140 | 145 | 150 |
| Val | Lys | Val | Gln | Met | Gln | Met | Glu | Gly | Lys | Arg | Lys | Leu | Glu | Gly | | 155 | 160 | 165 |
| Lys | Pro | Leu | Arg | Phe | Arg | Gly | Val | His | His | Ala | Phe | Ala | Lys | Ile | | 170 | 175 | 180 |
| Leu | Ala | Glu | Gly | Gly | Ile | Arg | Gly | Leu | Trp | Ala | Gly | Trp | Val | Pro | | 185 | 190 | 195 |
| Asn | Ile | Gln | Arg | Ala | Ala | Leu | Val | Asn | Met | Gly | Asp | Leu | Thr | Thr | | 200 | 205 | 210 |
| Tyr | Asp | Thr | Val | Lys | His | Tyr | Leu | Val | Leu | Asn | Thr | Pro | Leu | Glu | | 215 | 220 | 225 |
| Asp | Asn | Ile | Met | Thr | His | Gly | Leu | Ser | Ser | Leu | Cys | Ser | Gly | Leu | | 230 | 235 | 240 |
| Val | Ala | Ser | Ile | Leu | Gly | Thr | Pro | Ala | Asp | Val | Ile | Lys | Ser | Arg | | 245 | 250 | 255 |
| Ile | Met | Asn | Gln | Pro | Arg | Asp | Lys | Gln | Gly | Arg | Gly | Leu | Leu | Tyr | | 260 | 265 | 270 |
| Lys | Ser | Ser | Thr | Asp | Cys | Leu | Ile | Gln | Ala | Val | Gln | Gly | Glu | Gly | | 275 | 280 | 285 |
| Phe | Met | Ser | Leu | Tyr | Lys | Gly | Phe | Leu | Pro | Ser | Trp | Leu | Arg | Met | | 290 | 295 | 300 |
| Thr | Pro | Trp | Ser | Met | Val | Phe | Trp | Leu | Thr | Tyr | Glu | Lys | Ile | Arg | | | | |

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Glu Met Ser Gly Val Ser Pro Phe
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<211> 31

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-31

<223> Synthetic construct.

<400> 407

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<211> 34

<212> DNA

<213> Artificial

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<222> 1-34

<223> Synthetic construct.

<400> 408

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<210> 409

<211> 1487

<212> DNA

<213> Homo sapiens

<400> 409

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cagcatTTaa tgaaaaatTT atgcttaaga agtaaaaatg gcaggcttcc 150

tagataatTT tcgttggcca gaatgtgaat gtattgactg gaggtagaga 200

agaaatgctg tggcatctgt tgcgcaggt atattgtttt ttacaggctg 250

gtggataatg attgatgcag ctgtggtgta tcctaagcca gaacagttga 300

accatgcctt tcacacatgt ggtgtatTTT ccacattggc tttcttcatg 350

ataaatgctg tatccaatgc tcaggtgaga ggtgatagct atgaaagcgg 400

ctgttttagga agaacagggtg ctcgagtttg gcttttcatt ggtttcatgt 450

tgatgttttg gtcacttatt gcttccatgt ggattctttt tggtagcatat 500

gttaccctaaa atactgatgt ttatccggga ctagctgtgt tttttcaaaa 550

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 <211> 158
 <212> PRT
 <213> Homo sapiens

<400> 410
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 35 40 45
 Val Val Tyr Pro Lys Pro Glu Gln Leu Asn His Ala Phe His Thr
 50 55 60
 Cys Gly Val Phe Ser Thr Leu Ala Phe Phe Met Ile Asn Ala Val
 65 70 75

Ser Asn Ala Gln Val Arg Gly Asp Ser Tyr Glu Ser Gly Cys Leu
80 85 90

Gly Arg Thr Gly Ala Arg Val Trp Leu Phe Ile Gly Phe Met Leu
95 100 105

Met Phe Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Ala
110 115 120

Tyr Val Thr Gln Asn Thr Asp Val Tyr Pro Gly Leu Ala Val Phe
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Phe Gln Asn Ala Leu Ile Phe Phe Ser Thr Leu Ile Tyr Lys Phe
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Gly Arg Thr Glu Glu Leu Trp Thr
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<211> 20

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<400> 412

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<211> 40

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<222> 1-40

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<400> 413

atggcaggct tctagataa ttttcgttgg ccagaatgtg 40

<210> 414

<211> 1337
<212> DNA
<213> Homo sapiens

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tttgccatag tcacgacatg gatgtttatt cgaagctaca tgagcttcag 400
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gacttgggga gttcctacgc aaaacaactg ggcttcgggg acagctgggt 850
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taaagaacag ccagacaca aacaaatacg agggatggcc agagctgctg 950
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gcaggtcctt gcacgctgtg tcgcgcctct cctcctcgga aacagaacct 1150
tcccacagca catcctaccc ggaagaccag cctcagaggg tccttctgga 1200
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 <211> 224
 <212> PRT
 <213> Homo sapiens

<400> 415

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Val | Ser | Gly | Val | Leu | Arg | Leu | Leu | Ala | Leu | Ile | Phe | Ala | 1 | 5 | 10 | 15 |
| Ile | Val | Thr | Thr | Trp | Met | Phe | Ile | Arg | Ser | Tyr | Met | Ser | Phe | Ser | 20 | 25 | 30 | |
| Met | Lys | Thr | Ile | Arg | Leu | Pro | Arg | Trp | Leu | Ala | Ala | Ser | Pro | Thr | 35 | 40 | 45 | |
| Lys | Glu | Ile | Gln | Val | Lys | Lys | Tyr | Lys | Cys | Gly | Leu | Ile | Lys | Pro | 50 | 55 | 60 | |
| Cys | Pro | Ala | Asn | Tyr | Phe | Ala | Phe | Lys | Ile | Cys | Ser | Gly | Ala | Ala | 65 | 70 | 75 | |
| Asn | Val | Val | Gly | Pro | Thr | Met | Cys | Phe | Glu | Asp | Arg | Met | Ile | Met | 80 | 85 | 90 | |
| Ser | Pro | Val | Lys | Asn | Asn | Val | Gly | Arg | Gly | Leu | Asn | Ile | Ala | Leu | 95 | 100 | 105 | |
| Val | Asn | Gly | Thr | Thr | Gly | Ala | Val | Leu | Gly | Gln | Lys | Ala | Phe | Asp | 110 | 115 | 120 | |
| Met | Tyr | Ser | Gly | Asp | Val | Met | His | Leu | Val | Lys | Phe | Leu | Lys | Glu | 125 | 130 | 135 | |
| Ile | Pro | Gly | Gly | Ala | Leu | Val | Leu | Val | Ala | Ser | Tyr | Asp | Asp | Pro | 140 | 145 | 150 | |
| Gly | Thr | Lys | Met | Asn | Asp | Glu | Ser | Arg | Lys | Leu | Phe | Ser | Asp | Leu | 155 | 160 | 165 | |
| Gly | Ser | Ser | Tyr | Ala | Lys | Gln | Leu | Gly | Phe | Arg | Asp | Ser | Trp | Val | 170 | 175 | 180 | |
| Phe | Ile | Gly | Ala | Lys | Asp | Leu | Arg | Gly | Lys | Ser | Pro | Phe | Glu | Gln | 185 | 190 | 195 | |
| Phe | Leu | Lys | Asn | Ser | Pro | Asp | Thr | Asn | Lys | Tyr | Glu | Gly | Trp | Pro | 200 | 205 | 210 | |
| Glu | Leu | Leu | Glu | Met | Glu | Gly | Cys | Met | Pro | Pro | Lys | Pro | Phe | 215 | 220 | | | |

<210> 416
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence

<222> 1-21
 <223> Synthetic construct.

 <400> 416
 gccatagtca cgacatggat g 21

 <210> 417
 <211> 18
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-18
 <223> Synthetic construct.

 <400> 417
 ggatggccag agctgctg 18

 <210> 418
 <211> 26
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

 <400> 418
 aaagtacaag tgtggcctca tcaagc 26

 <210> 419
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 419
 tctgactcct aagtcaggca ggag 24

 <210> 420
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

 <400> 420
 attctctcca cagacagctg gttc 24

<210> 421
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 421
gtacaagtgt ggccatcatca agccctgccc agccaactac tttgcg 46

<210> 422
<211> 1701
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1528
<223> unknown base

<400> 422
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tgtcctgggg atccagaaac ccatgatacc ctactgaaca ccgaatcccc 100
tggaagccca cagagacaga gacagcaaga gaagcagaga taaatacact 150
cacgccagga gctcgtctgc tctctctctc tctctctcac tctcctctcc 200
ctctctctct gctgttctta gtcctctagt cctcaaattc ccagtcccct 250
gcaccccttc ctgggacact atgttgttct ccgccctcct gctggagggtg 300
atgttgatcc tggctgcaga tgggggtcaa cactggacgt atgaggggcc 350
acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400
cccagtgccc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450
ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500
ggacctgcac aacaatggcc acacagtgc actctctctg ccctctaccc 550
tgtatctggg tggacttccc cgaaaatatg tagctgcca gctccacctg 600
cactgggggtc agaaaggatc ccaggggggg tcagaacacc agatcaacag 650
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atgacagctt gactgaggct gctgagaggc ctgagggcct ggctgtcctg 750
ggcatcctaa ttgagggtgg tgagactaag aatatagctt atgaacacat 800
tctgagtcac ttgcatgaag tcaggcataa agatcagaag acctcagtgc 850

ctcccttcaa cctaagagag ctgctcccca aacagctggg gcagtacttc 900
cgctacaatg gctcgctcac aactccccct tgctaccaga gtgtgctctg 950
gacagttttt tatagaaggt ccagatttc aatggaacag ctggaaaagc 1000
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cagaactacc gagcccttca gcctctcaat cagcgcattg tctttgcttc 1100
tttcatccaa gcaggatcct cgtataccac aggtgaaatg ctgagtctag 1150
gtgtaggaat cttggttggc tgtctctgcc ttctctggc tgtttatttc 1200
attgctagaa agattcggaa gaagaggctg gaaaaccgaa agagtgtggt 1250
cttcacctca gcacaagcca cgactgaggc ataaattcct tctcagatac 1300
catggatgtg gatgacttcc cttcatgcct atcaggaagc ctctaaaatg 1350
gggtgtagga tctggccaga aacactgtag gagtagtaag cagatgtcct 1400
ccttccccctg gacatctctt agagaggaat ggaccaggc tgtcattcca 1450
ggaagaactg cagagccttc agcctctcca aacatgtagg aggaaatgag 1500
gaaatcgctg tgttgtaaat gcagaganca aactctgttt agttgcaggg 1550
gaagtttggg atatacccca aagtcctcta cccctcact tttatggccc 1600
tttccctaga tatactgcgg gatctctcct taggataaag agttgctggt 1650
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t 1701

<210> 423

<211> 337

<212> PRT

<213> Homo sapiens

<400> 423

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ile | Phe | Ser | Ala | Leu | Leu | Leu | Glu | Val | Ile | Trp | Ile | Leu | Ala |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Ala | Asp | Gly | Gly | Gln | His | Trp | Thr | Tyr | Glu | Gly | Pro | His | Gly | Gln |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Asp | His | Trp | Pro | Ala | Ser | Tyr | Pro | Glu | Cys | Gly | Asn | Asn | Ala | Gln |
| | | | | 35 | | | | 40 | | | | | 45 | |
| Ser | Pro | Ile | Asp | Ile | Gln | Thr | Asp | Ser | Val | Thr | Phe | Asp | Pro | Asp |
| | | | | 50 | | | | 55 | | | | | 60 | |
| Leu | Pro | Ala | Leu | Gln | Pro | His | Gly | Tyr | Asp | Gln | Pro | Gly | Thr | Glu |
| | | | | 65 | | | | 70 | | | | | 75 | |
| Pro | Leu | Asp | Leu | His | Asn | Asn | Gly | His | Thr | Val | Gln | Leu | Ser | Leu |

| 80 | 85 | 90 |
|-------------------------------------|-------------------------|-----|
| Pro Ser Thr Leu Tyr Leu Gly Gly Leu | Pro Arg Lys Tyr Val Ala | |
| 95 | 100 | 105 |
| Ala Gln Leu His Leu His Trp Gly Gln | Lys Gly Ser Pro Gly Gly | |
| 110 | 115 | 120 |
| Ser Glu His Gln Ile Asn Ser Glu Ala | Thr Phe Ala Glu Leu His | |
| 125 | 130 | 135 |
| Ile Val His Tyr Asp Ser Asp Ser Tyr | Asp Ser Leu Ser Glu Ala | |
| 140 | 145 | 150 |
| Ala Glu Arg Pro Gln Gly Leu Ala Val | Leu Gly Ile Leu Ile Glu | |
| 155 | 160 | 165 |
| Val Gly Glu Thr Lys Asn Ile Ala Tyr | Glu His Ile Leu Ser His | |
| 170 | 175 | 180 |
| Leu His Glu Val Arg His Lys Asp Gln | Lys Thr Ser Val Pro Pro | |
| 185 | 190 | 195 |
| Phe Asn Leu Arg Glu Leu Leu Pro Lys | Gln Leu Gly Gln Tyr Phe | |
| 200 | 205 | 210 |
| Arg Tyr Asn Gly Ser Leu Thr Thr Pro | Pro Cys Tyr Gln Ser Val | |
| 215 | 220 | 225 |
| Leu Trp Thr Val Phe Tyr Arg Arg Ser | Gln Ile Ser Met Glu Gln | |
| 230 | 235 | 240 |
| Leu Glu Lys Leu Gln Gly Thr Leu Phe | Ser Thr Glu Glu Glu Pro | |
| 245 | 250 | 255 |
| Ser Lys Leu Leu Val Gln Asn Tyr Arg | Ala Leu Gln Pro Leu Asn | |
| 260 | 265 | 270 |
| Gln Arg Met Val Phe Ala Ser Phe Ile | Gln Ala Gly Ser Ser Tyr | |
| 275 | 280 | 285 |
| Thr Thr Gly Glu Met Leu Ser Leu Gly | Val Gly Ile Leu Val Gly | |
| 290 | 295 | 300 |
| Cys Leu Cys Leu Leu Leu Ala Val Tyr | Phe Ile Ala Arg Lys Ile | |
| 305 | 310 | 315 |
| Arg Lys Lys Arg Leu Glu Asn Arg Lys | Ser Val Val Phe Thr Ser | |
| 320 | 325 | 330 |
| Ala Gln Ala Thr Thr Glu Ala | | |
| 335 | | |

<210> 424
 <211> 18
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 424
gtaaagtcgc tggccagc 18

<210> 425
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 425
cccgatctgc ctgctgta 18

<210> 426
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 426
ctgcactgta tggccattat tgtg 24

<210> 427
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 427
cagaaaccca tgatacccta ctgaacaccg aatcccctgg aagcc 45

<210> 428
<211> 1073
<212> DNA
<213> Homo sapiens

<400> 428
aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50
acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100
gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

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aacctgcttt gggactccct cccacaaaac tggctccgga tcagggaaca 200
ctaccaaac aacagcagtc aaatcaggtc tttccttctt taagtctgat 250
accattaaca cagatgctca cactggggcc agatctgcat ctgttaaata 300
ctgctgcagg aatgacacct ggtaccaga cccacccatt gacctggga 350
gggttgaatg tacaacagca actgcacca catgtgttac caatttttgt 400
cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450
aaatcttcac gagcctcctc atccattcct tgttcccggg aggcaccttg 500
cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550
agcaggagga gcaggtgtta atcctgccac ccagggaacc ccagcaggcc 600
gcctcccaac tcccagtggc acagatgacg actttgcagt gaccaccct 650
gcaggcatcc aaaggagcac acatgccatc gaggaagcca ccacagaata 700
agcaaatgga attcagtaag ctgtttcaaa ttttttcaac taagctgcct 750
cgaatttggt gatacatgtg aatctttatc attgattata ttatggaata 800
gattgagaca cattggatag tcttagaaga aattaattct taatttacct 850
gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900
cttttaaaaa caataattca atggataaat ctgtctttga aatataacat 950
tatgctgcct ggatgatatg catattaaaa catatttgga aaactggaaa 1000
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1050
aaaaaaaaaa aaaaaaaaaa aaa 1073

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<210> 429

<211> 209

<212> PRT

<213> Homo sapiens

<400> 429

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Met Arg Ser Thr Ile Leu Leu Phe Cys Leu Leu Gly Ser Thr Arg
 1             5             10             15

Ser Leu Pro Gln Leu Lys Pro Ala Leu Gly Leu Pro Pro Thr Lys
             20             25             30

Leu Ala Pro Asp Gln Gly Thr Leu Pro Asn Gln Gln Gln Ser Asn
             35             40             45

Gln Val Phe Pro Ser Leu Ser Leu Ile Pro Leu Thr Gln Met Leu
             50             55             60

Thr Leu Gly Pro Asp Leu His Leu Leu Asn Pro Ala Ala Gly Met
             65             70             75

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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Thr | Gln | Thr | His | Pro | Leu | Thr | Leu | Gly | Gly | Leu | Asn | 80 | 85 | 90 |
| Val | Gln | Gln | Gln | Leu | His | Pro | His | Val | Leu | Pro | Ile | Phe | Val | Thr | 95 | 100 | 105 |
| Gln | Leu | Gly | Ala | Gln | Gly | Thr | Ile | Leu | Ser | Ser | Glu | Glu | Leu | Pro | 110 | 115 | 120 |
| Gln | Ile | Phe | Thr | Ser | Leu | Ile | Ile | His | Ser | Leu | Phe | Pro | Gly | Gly | 125 | 130 | 135 |
| Ile | Leu | Pro | Thr | Ser | Gln | Ala | Gly | Ala | Asn | Pro | Asp | Val | Gln | Asp | 140 | 145 | 150 |
| Gly | Ser | Leu | Pro | Ala | Gly | Gly | Ala | Gly | Val | Asn | Pro | Ala | Thr | Gln | 155 | 160 | 165 |
| Gly | Thr | Pro | Ala | Gly | Arg | Leu | Pro | Thr | Pro | Ser | Gly | Thr | Asp | Asp | 170 | 175 | 180 |
| Asp | Phe | Ala | Val | Thr | Thr | Pro | Ala | Gly | Ile | Gln | Arg | Ser | Thr | His | 185 | 190 | 195 |
| Ala | Ile | Glu | Glu | Ala | Thr | Thr | Glu | Ser | Ala | Asn | Gly | Ile | Gln | | 200 | 205 | |

<210> 430
 <211> 1257
 <212> DNA
 <213> Homo Sapien

<400> 430
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 cggagcgcgg cggagccaga cgctgaccac gttcctctcc tcggtctcct 100
 ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150
 gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200
 ctgcagctgc ccgcgcgctc gagcgctct gagatcccca aggggaagca 250
 aaaggcgcag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300
 gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350
 aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400
 agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacacca 450
 actacaagca gtgttcatgg agttcattga attatggcat agatcttggg 500
 aaaattgcgg agtgtacatt tacaagatg cgttcaaata gtgctctaag 550
 agttttgttc agtggctcac ttcggtataa atgcagaaat gcatgctgtc 600
 agcgttggtg tttcacattc aatggagctg aatgttcagg acctcttccc 650

attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700
aattaatatt catcgcaatt cttctgtgga aggactttgt gaaggaattg 750
gtgctggatt agtggatggt gctatctggg ttggcacttg ttcagattac 800
ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850
tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900
ttattatgcc ttggaatggt tcaactaaat gacattttta ataatgttat 950
gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000
tgatttcaca ctgtttttta atctagcatt attcattttg cttcaatcaa 1050
aagtggtttc aatatttttt ttagttgggt agaatacttt cttcatagtc 1100
acattctctc aacctataat ttggaatatt gttgtggtct tttgtttttt 1150
ctcttagtat agcattttta aaaaaatata aaagctacca atctttgtac 1200
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tccaaca 1257

<210> 431

<211> 243

<212> PRT

<213> Homo Sapien

<400> 431

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Pro | Gln | Gly | Pro | Ala | Ala | Ser | Pro | Gln | Arg | Leu | Arg | Gly | 1 | 5 | 10 | 15 |
| Leu | Leu | Leu | Leu | Leu | Leu | Leu | Gln | Leu | Pro | Ala | Pro | Ser | Ser | Ala | 20 | 25 | 30 | |
| Ser | Glu | Ile | Pro | Lys | Gly | Lys | Gln | Lys | Ala | Gln | Leu | Arg | Gln | Arg | 35 | 40 | 45 | |
| Glu | Val | Val | Asp | Leu | Tyr | Asn | Gly | Met | Cys | Leu | Gln | Gly | Pro | Ala | 50 | 55 | 60 | |
| Gly | Val | Pro | Gly | Arg | Asp | Gly | Ser | Pro | Gly | Ala | Asn | Val | Ile | Pro | 65 | 70 | 75 | |
| Gly | Thr | Pro | Gly | Ile | Pro | Gly | Arg | Asp | Gly | Phe | Lys | Gly | Glu | Lys | 80 | 85 | 90 | |
| Gly | Glu | Cys | Leu | Arg | Glu | Ser | Phe | Glu | Glu | Ser | Trp | Thr | Pro | Asn | 95 | 100 | 105 | |
| Tyr | Lys | Gln | Cys | Ser | Trp | Ser | Ser | Leu | Asn | Tyr | Gly | Ile | Asp | Leu | 110 | 115 | 120 | |
| Gly | Lys | Ile | Ala | Glu | Cys | Thr | Phe | Thr | Lys | Met | Arg | Ser | Asn | Ser | 125 | 130 | 135 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu |
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Leu Pro Lys

<210> 432
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Artificial Sequence

<400> 432
 aggacttgcc ctcaggaa 18

<210> 433
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 433
 cgcaggacag ttgtgaaaat a 21

<210> 434
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 434
 atgacgctcg tccaaggcca c 21

<210> 435

<211> 19
<212> DNA
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<220>
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<400> 435
cccacctgta ccaccatgt 19

<210> 436
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<220>
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<400> 436
actccaggca ccatctgttc tccc 24

<210> 437
<211> 19
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<220>
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<400> 437
aagggctggc attcaagtc 19

<210> 438
<211> 19
<212> DNA
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<220>
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<400> 438
tgacctggca aaggaagaa 19

<210> 439
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<400> 439
cagccaccct ccagtccaag g 21

<210> 440
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<220>
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<400> 440
gggtcgtggt ttggagaga 19

<210> 441
<211> 20
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<220>
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<400> 441
ctggccctca gagcaccaat 20

<210> 442
<211> 25
<212> DNA
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<220>
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<400> 442
tcctccatca cttcccctag ctcca 25

<210> 443
<211> 24
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<220>
<223> Synthetic oligonucleotide probe

<400> 443
ctggcaggag ttaaagttcc aaga 24

<210> 444
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 444
aaaggacacc gggatgtg 18

<210> 445
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 445
 agcgtacact ctctccaggc aaccag 26

<210> 446
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 446
 caattctgga tgaggtggta ga 22

<210> 447
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<220>
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<400> 447
 caggactgag cgcttggtta 20

<210> 448
 <211> 21
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<220>
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<400> 448
 caaagcgcca agtaccggac c 21

<210> 449
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<400> 449
 ccagacctca gccaggaa 18

<210> 450
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<220>
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<400> 450
 ccctagctga ccccttca 18

<210> 451
<211> 23
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<220>
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<400> 451
tctgacaagc agttttctga atc 23

<210> 452
<211> 26
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<400> 452
ctctccccct cccttttcct ttgttt 26

<210> 453
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<400> 453
ctctggtgcc cacagtga 18

<210> 454
<211> 21
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 454
ccatgcctgc tcagccaaga a 21

<210> 455
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 455
caggaaatct ggaaacctac agt 23

<210> 456
<211> 20
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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 456

ccttgaaaag gacccagttt 20

<210> 457

<211> 22

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<223> Synthetic oligonucleotide probe

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atgagtcgca cctgctgttc cc 22

<210> 458

<211> 18

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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tagcagctgc ccttggtta 18

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<210> 460

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tgctaggcga cgacacccag acc 23

<210> 461

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 461

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<210> 462

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 462

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<210> 463

<211> 27

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<223> Synthetic oligonucleotide probe

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caccatttgt ttctctgtct ccccatc 27

<210> 464

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<210> 465

<211> 20

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<210> 466

<211> 23

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<223> Synthetic oligonucleotide probe

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<210> 467

<211> 18

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<400> 467

gccagagtc ccacttgt 18

<210> 468

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 468

actgctccgc ctactacga 19

<210> 469

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 469

aggcatcctc gccgtcctca 20

<210> 470

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 470

aaggccaagg tgagtccat 19

<210> 471

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 471

cgagtgtgtg cgaaacctaa 20

<210> 472

<211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 472
 tcagggtcta catcagcctc ctgc 24

 <210> 473
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 473
 aaggccaagg tgagtccat 19

 <210> 474
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 474
 cctactgagg agccctatgc 20

 <210> 475
 <211> 22
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 475
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 <210> 476
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 476
 gggaggctta taggcccaat ctgg 24

 <210> 477
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 477

ggcttcagca gcacgtgtga agtcgaagtc gcagtcacag atatcaatga 50